ATLANTIC WIRE COMPANY

BRANFORD, CONNECTICUT

HAZARDOUS WASTE
DELISTING PETITION
DOCUMENTATION

20 AUGUST 1985

Camp and Associates Inc.

CONSULTING ENGINEERS
ATLANTA, GA. BARRINGTON, R.I.
PLAINVIEW, N.Y.

CAMP AND ASSOCIATES, INC.
CONSULTING ENGINEERS

120 COPELAND RD.
ATLANTA, GEORGIA 30342
TEL. (404) 252-1252

205-04
March 18, 1986

Mr. Girard Sotolongo
United States Environmental Protection Agency
Region I
Waste Management Division
Room 1903
John F. Kennedy Federal Building
Boston, MA 02203

SUBJECT: Atlantic Wire Company, Branford, CT
EPA I.D. No. CT001161181; Delisting Petition No. 0189

Dear Mr. Sotolongo:

Per our conversation on March 17, 1986, enclosed are copies of various letters and documents dealing with the subject. This data should assist you in understanding the history of Atlantic Wire Company's delisting petition.

As I mentioned, Atlantic Wire Company received the Registered letter from EPA regarding the temporary exclusions on March 17, 1986, and my contact with your group was in accordance with the final paragraph of the letter.

Please call me when you have had the opportunity to review this package of information. As we discussed, my client is continuing to operate using existing disposal practices pending your instructions to the contrary.

If you have any questions, or require any additiional information, please call me.

Very truly yours,

William W. Camp, P.E.
President

WWC/gmh
Enclosure

cc: R. Lawlor
P. Curcurato
J. Roussat
R. Wilson

CAMP AND ASSOCIATES, INC.
CONSULTING ENGINEERS

120 COPELAND RD.
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205-04

August 16, 1985

Mr. Scott J. Maid
Environmental Protection Specialist
Waste Identification Branch (WH-562B)
Office of Solid Waste and Emergency Response
United States Environmental Protection Agency
Washington, D.C. 20460

SUBJECT: Atlantic Wire Company
Delisting Petition No. 0189

Gentlemen:

This letter is a final response to your letter of 19 February 1985 to Atlantic Wire Company.

You will recall that an interim response was prepared by the undersigned on 22 March 1985. At that time, I explained that the data requested required contact with chemical suppliers and collection and analysis of sludge samples. The assembly of the required information took longer than anticipated and we apoligize for the delay.
ATTACHMENT I to your letter of 19 February 1985, contained six major paragraphs requesting various information and data. This letter and attachments will respond to each of the paragraphs in the order listed.

PARAGRAPH 1- "A detailed description of waste management practices, etc..."

RESPONSE: The overall waste water system is as described in my letter dated 20 November 1981 to William G. Sproat, Jr. A copy of that letter is included as Attachment A. With regard to this attachment, it should be noted that;

1) Trichloroethlene is no longer used by Atlantic Wire Co.

2) The current monthly volume of sludge removed from the storage tank and transported to the city lagoons is approximately 150,000 gallons @ 3% +/- solids

As indicated above, the sludge is currently transported by tank truck to the City of Branford holding lagoon. The sludge has always been deposited in this same lagoon, ever since the Atlantic Wire Company's initial system was installed in 1968.

The proposed modifications to the treatment portion of the Atlantic Wire Company facility were approved by the Connecticut D.E.P.. Installation of the modifications was completed in early 1984. Pertinent excerpts from the Wastewater System Operations and Maintenance Manual are included as Attachment B.

PARAGRAPGH 2- "A discussion explaining why hazardous constituents (as listed in Appendix VIII) are not expected to be present, etc..."

- "TOC Samples"
- "Material SAFETY Data Sheets"
- "Oil and Hydraulic fluids"

RESPONSE: The Atlantic Wire Company's petitioned waste is not expected to contain hazardous constituents as listed in Appendix VIII since none of these materials are used and/or are allowed to enter the wastewater system.

As requested, four representative samples of the petitioned waste were analyzed for TOC. Samples were collected on 11 April 1985, 25 April 1985, 9 May 1985, and 25 June 1985. The samples were collected by and analyzed by Aqualogic, Inc., New Haven, CT. The sample results are included herein as Attachment C.

In response to you request for Material Safety Data Sheets for the raw materials which were listed in Mr. Wilson's letter of 23 February 1984 to M.E. Morse, Attachment D contains copies of data sheets which were supplied to Atlantic Wire Company by their various raw materials suppliers. Please note that this attachment includes some suppliers cover letters which indicate that their material is confidential.

In response to your request for identification of sources and types of oils and hydraulic fluids which may enter the waste treatment system, Atlantic Wire Comapny purchases standard motor oil, 90 weight gear oil, and standard hydraulic brake fluid. The potential exists for mobile equipment drips and leaks of motor oil, gear oil , and brake fluid, however, it is unlikely that these materials would enter the waste system. In each of the two cleaning houses, there are cranes which use brake fluid and/or gear oil which would enter the waste system should a substantial leak occur. It should be noted that since the present management has been in place (1980), there has never been a significant spill of oil or brake fluid which has entered the waste system, nor has there been a sufficient quantity in the treatment facility to produce a visible sheen.

PARAGRAPH 3- "Data indicating that the sludge does not exhibit the characteristics of ignitability, reactivity, or corrosivity as outlined in Subpart C 261.21-.23, etc..."

RESPONSE: Tests and evaluations of the sludge material were made by Aqualogic, Inc. Their report relative to the evaluation of ignitability, reactivity, and corrosivity as outlined in Subpart C 261.21 -23 is included as Attachment E.

PARAGRAPH 4- "Results of three additional EP toxicity tests, etc..."

RESPONSE: As requested, three additional samples were collected and subjected to EP toxicity tests for chromium and nickel. The samples were collected on 11 April 1985, 25 April 1985, and 9 May 1985. The samples were collected by and analyzed by Aqualogic, Inc. The EP toxicity results are included as Attachment F. Attachment E contains the requested information regarding the sample collection procedures, collection dates and analysis dates.

With regard to the sampling procedure for the sludge sample referenced in our submittal of 22 June 1985, the sample was taken during one of the periodic sludge removal operations. After a short period of time during the removal, a standard plastic sample container, which had been flushed with distilled water, was filled and capped. The sample was then transported to the laboratory where it was stored at 70 degrees F+/- in the sample room until the analytical work was done the next day.

PARAGRAPH 5 - "A total constituent analysis for chromium, nickel and cyanide on an additional sludge sample.

RESPONSE: As requested, a total constituent anaylsis for chromium, nickel and cyanide was performed on a sludge sample. The sample was collected and analyzed by Aqualogic, Inc. on 30 April 1985. The results of the anaylsis are presented in Attachment G.

PARAGRAPGH 6 - " A statement indicating whether the facility is currently facing any enforcement action, etc..."

RESPONSE: Atlantic Wire Comapny is not currently facing any enforcement action and to the best of our knowledge, none is contemplated by any regulating authority.

We believe that the information contained in this letter and attachments is fully responsive to your request for information. If you have any questions, or require any additional information, please call me, or Mr. Robert Wilson at Atlantic Wire Company.

Very truly yours,

William W. Camp, P.E.
President

WWC/sc

cc: R. Lawlor
A. Sidney
J. Roussat
R. Wilson

ATTACHMENT A

CAMP AND ASSOCIATES, INC.
CONSULTING ENGINEERS

SUITE 243
120 COPELAND RD.
ATLANTA, GEORGIA 30342
TEL. (404) 252-1252

November 20, 1981

William G. Sproat, Jr.
Waste Characterization Branch
Hazardous and Industrial Waste Division
Office of Solid Waste
United States Environmental Protection Agency
Washington, DC 20460

SUBJECT: Atlantic Wire Company
Delisting of Wastewater Sludge

Dear Mr. Sproat:

In response to your letter of 24 September 1981, to Mr. Al Ryon of Atlantic Wire Company, the following responses are offered. The numbers in this letter correspond to the numbers in your letter;

1. There are no electroplating operations at Atlantic Wire Company. Traces of Cadmium, Chrome, Nickel are present from raw materials and cleaning agents. There is no Cyanide from any operation.

2. A representative sludge sample was analysed as requested. See attached report from York Wastewater Consultants, Inc. for analytical results.

3. Enclosed are several pages from the Concept Engineering Report prepared by Camp and Associates Inc. as well as a Schematic Flow Diagram for the proposed facility. The improvements shown have not as yet been implemented. We are awaiting final approval from Connecticut D.E.P.

4. The F001 solvent is trichloroethlene. The spent solvent is picked up by the supplier at the time replacement solvent is delivered. Consequently, Atlantic Wire Company does not dispose of this material.

5. The average monthly volume as expressed in the RCRA Permit Application is 10,000 gallons/month. The normal solids content in the sludge is 13-14% by weight.

If you have any questions, or desire any additional information, please call me or Mr. Ryon.

Very truly yours,

William W. Camp, P.E.
President

WWC/mp
Enclosure

cc: R. Lawlor
J. Walker
A. Ryon

YWC

October 23, 1981

01-3082-213
CAMP & ASSOCIATES
Suite 100
6075 Roswell Road
Atlanta, Georgia 30328

Attention: William Camp

PURPOSE AND RESULTS

One sludge sample from the Atlantic Wire Company, Branford, CT was submitted to the Analytical Laboratory Division of York Wastewater Consultants, Inc. for determination of total cadmium, chromium, nickel and cyanide. The sample was also analyzed for leachable nickel according to the Resource Conservations and Recovery Act, (RCRA), Federal Register, Vol. 45, No. 98, May 19, 1980.

The results are as follows:

Total Cadmium (dry basis)	<1.25 ug/g
Total Chromium (dry basis)	1,140 ug/g
Total Nickel (dry basis)	190 ug/g
Total Cyanide (dry basis)	<0.05 ug/g
Leachable Nickel (RCRA)	0.33 mg/l

Prepared by: Daniel F. Ott
Daniel F. Ott
Senior Chemist

Description of Pollution Control Facilities

The pollution control facilities at Atlantic Wire Company basically consists of an acid recovery unit for the spent sulfuric acid pickle liquor and a neutralization clarification system for contaminated process water treatment.

The acid recovery unit includes three compartments; crystalizer, crystal drainage tank and recovered acid tank. The crystallizer receives the hot spent sulfuric acid which is pumped from the pickling tanks. Through gradual cooling of the liquor to approximately 60°F. using city water, ferrous sulfate crystals (ferrous sulfate heptahydrate) are formed. The slurry is then discharged into the crystal drainage tank where the recovered acid drains into the recovered acid tank and the crystals are retained. The crystals are subsequently washed with fresh water and conveyed to storage. The recovered acid is supplemented with fresh sulfuric acid and is recycled to the pickling tanks. The ferrous sulfate crystals are currently being hauled for recovery by the Reirchard-Coulston Company of Pennsylvania. The material is transported by Sinques Trucking of New Haven. Additional discussion regarding the disposal of ferrous sulfate as well as other waste chemicals may be found in a subsequent section entitled "Solid/Hazardous/Toxic Waste Disposal".

The neutralization-clarification system is used to treat the contaminated process waters from various areas in the plant. The contaminated water collection system is conveyed to a neutralization tank located within the treatment facility at the west end of the plant, drawing B-8 Liquid caustic soda is added to the incoming wastewater proportional to flow. Caustic addition is automatically controlled in order to achieve a pH of approximately 9.2 ± 0.5. The neutralized waste is then pumped by two, level controlled,

vertical turbine pumps to the flocculation chamber adjacent to the Lamella clarifier. At this point, anionic polymer (Betz #1100) is added for the purpose of promoting a settleable floc. The waste then flows by gravity into the Lamella clarifier. Sludge is discharged into the sludge holding tank directly below the clarifier. The overflow from the clarifier is discharged into the effluent sump where it mixes with the non contaminated cooling water and flows by gravity to the Branford River.

Sludge is periodically removed from the holding tank and hauled to a lagoon system at the City of Branford's municipal wastewater treatment plant. The waste sludge is hauled to the city owned and operated lagoons by the Atlantic Trucking Company of Branford, CT.

Water Usage/Flow Balance

The data obtained and presented in Figure 2 and Tables 1, 2, and 3 was analyzed to provide a plant and system water balance. As can be seen from the following summary, a reasonable flow balance has been achieved based on current conditions.

FLOW BALANCE SUMMARY
(From Table 1, 2, 3, and Figure 2)

ITEM	GALLONS PER DAY
Non Contaminated Water Usage	119,000
Contaminated Water Usage	124,000
Sanitary Usage	6,000
Total	249,000
Total Average Daily Water Demand	278,000
Total Variance	29,000

The flow variance of 29,000 GPD is attributed to miscellaneous leaks, spills, and flow continuing to operating equipment during non-operating time periods. In the development of the Design Basis, this quantity has been attributed to miscellaneous sources and was allocated on the basis of; 15,000 GPD - contaminated, and 14,000 GPD - non contaminated.

Sampling and Analysis Program

Based upon the field studies and investigations and the evaluation of the facilities; a sampling and analysis program was established to provide data relative to the following:

- Characteristics of various flows currently discharged into the non contaminated system.
- Characteristics of selected streams currently discharged into the contaminated wastewater system.
- Characteristics of storm water flow.
- Characteristics of waste discharged into the sanitary system.
- Effectiveness and efficiency of the existing treatment system.
- Characteristics of the sludge being hauled to the municipal lagoon.

Results of the sampling program are presented in Table 7. A detailed review of this data results in the following observations relative to the systems:

1. Contaminated waste are not being discharged into the sanitary sewer system.
2. The storm sewer system contains significant quantities of residual contaminants which must be removed. Additionally, Department 139 trench overflow must be removed from the storm sewer system.
3. The Tinning Frame rinse water discharges do not possess significant contaminants and should be discharged into the non contaminated water system.

TABLE 7

ATLANTIC WIRE COMPANY

SAMPLING PROGRAM DATA

NO.	LOCATION	pH	mg/l TSS	mg/l TOC	mg/l Cr	mg/l Cu	mg/l Fe	mg/l Ni	mg/l Sn	mg/l Zn	mg/l O&G
1.	Lamella Unit Influent	8.8	15.6		0.008	0.016	0.394	0.05	<0.5	<0.004	
2.	Sludge Tank Supernatant	0.77	<1.0		0.004	0.082	1.04	0.038	<0.5	0.09	
3.	Sludge	8.8	13,596		414µg/g	6050µg/g	39,196µg/g	214µg/g	2609µg/g	26,306µg/g	
4.	Treatment Plant Influent	1.6	45.0	0.68	0.68	1.6	594	0.436	7.76	2.5	
5.	Stormwater 8" line 37972,37973,37974						0.082				
6.	Stormwater 10" line	6.4 3.4	32.6 4.7	 20	0.02	0.116	44.0 92.0	0.028	<0.5	0.194	 9.0
7.	Stormwater 12" line	2.8	139.2	13			276				4.3
8.	Reservoir #2	7.1	40.1		<0.002	0.016	0.164	0.016	<0.5	0.089	
9.	Reservoir #1	6.4	1.5		<0.002	0.188	0.516	0.008	<0.5	0.079	
10.	614 Tinning Frame Rinse	7.2					0.352		0.5		
11.	HIC Cooling Water	6.7	8.1				0.302				
12.	Lavite Drains	11.6	16.7				1.82				
13.	Floor Drain System North of Tinning Frame Area	6.8	2.4				0.36				
14a.	621 Tinning Frame Rinse Discharge	6.3					0.214		<0.5		

TABLE 7 (continued)

NO.	LOCATION	pH	mg/l TSS	mg/l TOC	mg/l Cr	mg/l Cu	mg/l Fe	mg/l Ni	mg/l Sn	mg/l Zn	mg/l O&G
14b.	Jewelry Wire Rinse	6.9					0.802		<0.5		
15.	137 Wet Wire Drainage Trench	7.6	1,235.7			20.0	32.0			2.0	
16.	Dept. 139-Wet Wire Drawing Trench Overflow	7.4	1,299				56.5			1.045	
17.	Dept. 136-Wet Wire Drawing Equipment	6.6	98.0				0.784			0.074	519.48
18.	Boiler Blowdown	10.9	133.3								

4. The treatment system provides very effective removal of contaminants.
5. Results from the sludge sample indicate that the overflow from the sludge storage tank can potentially contain contaminants and should be discharged to the influent sump in lieu of the effluent sump.
6. Contaminant levels in the non contaminated water system indicate that contaminated wastes are not entering the system.

Wastewater Quantities and Characteristics

Summarizing the data obtained in the study and presented in the preceeding sections of this report, Table 8 presents a tabulation of the waste streams from all sources throughout the plant which requires treatment in the treatment facility. Based upon the results of the Sampling program it has been determined that the Tinning Frame rinse waters should not be included in the contaminated stream. where do they go? UPDES DISCHARGE? Considering POTW

In order to insure that all the sources listed in Table 8 receive treatment, the following alterations and modifications to the system will be required:

1. A system for the collection and meter feeding of batch dumps will be required.
2. The boiler blowdown must be re-routed to the contaminated water system.
3. Overflows and drains from the Tinning Frames concentrated waste process tanks must be routed to the contaminated water system.
4. Non-contaminated flows to the wastewater system must be eliminated to minimize flow to the treatment system and maximize the efficiency of operation.
5. The washing system for the ferric sulfate crystals (currently inoperable) must be routed to the contaminated waste system. Rinse flows for the scrubber system should be routed to the acid recovery system.

TABLE 8

ATLANTIC WIRE COMPANY

WASTEWATER QUANTITIES AND CHARACTERISTICS

SOURCE	FLOW RATE GPD	pH	TSS mg/l	TOC mg/l	Cr mg/l	Cu mg/l	Fe mg/l	Ni mg/l	Sn mg/l	Zn mg/l	O&G mg/l
LCH Rinsewaters	42720	1.6	45	-	0.68	3.6	594	.44	7.76	2.5	-
SCH Rinsewaters	48810										
Boiler Condensate Losses*	14400										
Boiler Blowdown	3700	10.9	133.3								
Dept 136	900	6.6	98.0				.784			.07	519.
Dept 137		7.6	1235.7			70.	32.0			2.0	
Dept 139	300	7.4	1299				56.5			1.05	
Miscellaneous	15000										
Tank Dumps	4300										
Total	178,940**										

*Quantities presented are the estimated amount which enters the contaminated system

**Average operating flow rate = 106.3

6. Provision must be made to divert all overflows and dumps from lubricant, soap solution and cooling systems to the contaminated wastewater system.
7. pH control and polymer addition in the treatment system should be optimized to maximize operational efficiency while minimizing the use of caustic and polymer.
8. Recycle from the clarifier overflow should be diverted to reservoir No. 1 as required for make-up to the non contaminated system.
9. Improvement to the non contact cooling water should be implemented including:
   a. Use of this water source for spray rinse and rinse tank makeup in the small and large cleaning houses,
   b. Installation of cooling towers to facilitate recycling cooling of the Lee Wilson, HIC, air compressor and air conditioner equipment.

BOTH ARE NON CONTACT
RESERVOIR 1 & RESERVOIR 2 OVERFLOWS FROM RESERVOIR 2
• CLOSED LOOP COOLING + RINK WATER SUPPLY
RESERVOIR 2 NON-CONTACT COOLING WATER

70.4 GPM
85.1 GPM
86.3 GPM
22.5 GPM
37.4 GPM
50 GPM
RECYCLE 20 GPM
RECYCLE 20 GPM
5 GPM
23 GPM
5 GPM
5 GPM
1.5 GPM
10 GPM
10 GPM
13 GPM
106.3 GPM
36 GPM
3 GPM

WIRE DRAWING
DEPT. 139
DEPT. 136
DEPT. 137
2 GPM
P-6
S-2
5 GPM

LARGE CLEANING HOUSE
SMALL CLEANING HOUSE

10.4 GPM	MISC.	10.4 GPM
	H.P. RINSE NO.7	23 GPM
	COLD RINSE NO.8	20 GPM
1.5 GPM	SULL RACK NO. 1	1.5 GPM
	RINSE NO.3	5.8 GPM
	RINSE NO.5	5 GPM
	RINSE NO. 11	10.8 GPM
	RINSE NO.15	10.8 GPM
1.5 GPM	SPRAY	1.5 GPM
17.5 GPM	BOILER	15 GPM CONDENSATE LOSSES; 10 GPM; BLOWDOWN 2.5 GPM

ME-1
COOLING TOWER
P-2C
P-2A
P-2B
P-3
RESERVOIR NO.1
RESERVOIR NO.2

4.5 GPM	HIC OIL COOLING
9.1 GPM	TINNING FRAMES
5.0 GPM	AIR COMPRESSORS
8.8 GPM	614 ROLLING MILL
13 GPM	CRYSTALIZER TOWER (13 GPM)
9.7 GPM	MISC.
35 GPM	LEE WILSON
10 GPM	DRAWING MACHINES
13 GPM	AIR CONDITIONERS

50% NAOH
P-1B6
M-1
P-1A
P-1B
NEUTRALIZATION SUMP

M-1
P-4
T-2
CONCENTRATED WASTE HOLDING TANK

P-5
FLEXIBLE HOSE
TANK PUMPS ALL CONCENTRATED SOURCES

PLANT AIR
POLYMER MIX/FEED TANK
FLASH MIX TANK
LAMELLA CLARIFIER
T.C.
SLUDGE HOLDING TANK
TO TANK TRUCK
S-1
SPILLAGE COLLECTION SUMP

T-3
EMERGENCY EFFLUENT HOLDING TANK
STORM SEWERS
EFFLUENT SUMP
86.3 GPM TO RIVER

LEGEND
EXISTING PIPING
PROPOSED PIPING
NOTE: ALL NEW EQUIPMENT IS INDICATED BY SHADED AREAS

DES. BY:
DWG. BY: C.T.S.
CHK. BY: J.D.C.
REVISIONS

CAMP AND ASSOCIATES, INC.
CONSULTING ENGINEERS
ATLANTA, GEORGIA

ATLANTIC WIRE COMPANY

PROPOSED SCHEMATIC FLOW DIAGRAM

DWG. NO.
TUBE NO.
DATE:
SCALE:
B-7

ATTACHMENT B

VII WASTEWATER TREATMENT SYSTEM

General

The Wastewater Treatment System is a Physical-Chemical type of treatment system. The process consists of caustic addition to an optimum pH, flocculant addition, and gravity settling. With the addition of the caustic; hydroxides of the metals present are formed. In order to remove these compounds and other solids, gravity settling is employed. To enhance the settling operation, polymer is used. The polymer aids settling by enhancing the formation of a "floc" which is essientally agglomerated solids particles which are heavier than the individual particles would be without polymer. Elements of the system are as shown schematically on drawing A-3 in Appendix A. Recent system additions/modifications are shown on drawing M-1 of the "As Built" Water and Wastewater System Improvements.

In addition to the general descriptions contained herein, the operator should become familiar with the details for operation and maintenance contained in the Manufacturer Equipment Data which is on file at the Plant Engineering office. A summary of the Wastewater Treatment System Equipment is shown on Table 6.

Caustic Addition

Wastewater enters the influent sump at the southeast corner of the underground portion of the pump house structure. Caustic (50% NaOH) is added to the wastewater to an optimim pH of 9.2 through a pneumatically operated pinch valve. A mixer is installed in the influent sump to produce a homogeneous mixture. The flow of caustic

TABLE 6

WASTEWATER TREATMENT SYSTEM EQUIPMENT

Item	Description	Manufacturer	Model/Catalog No.
CV	Causic Control Valve		
PHIRC	pH Indicator, Controller Recorder		
P-1A, P-1B	Wastewater Pumps	ITT-Marlow Midland Park, NJ	32 HEL-9C
LC	Level Controller	Square - D	Class 9039
FC	Flow Controller	Foxboro Foxboro, MA	43 AP
CV	Flow Control Valve	DeZuric Sartell, MN	0300, Fig. 131, F, 2, ACGP7, P1
FIT	Flow Indicator Totalizer	Foxboro Foxboro, MA	Indicator E83 Totalizer 99A
-	Floculator		
-	Polyelectrolyte Feed Systme		
pHIA	pH Indicator Alarm		
-	Lamella Clarifier	Parkson Corp	
pHIA	pH Indicator Alarm	Foxboro	Monitor - 2220
CV	Sludge Control Valve and Actuator	Quarter Master Worcester Controls	3" Butterfly Series 75
TC	Sludge Timer Control	Intermatic Grand Rapids, MI	Series C 8865 Model V41079
LIA	Level Indicator Alarm - T-3	Foxboro Corp Foxboro, MI	
-	Instrument Air Compressor	Dayton	Speedaire

is controlled by a pH indicator recorder controller which is mounted in the pump house.

Periodic checks of the Caustic system should include the following:

1) Check caustic storage tank level
2) Check pinch valve for proper function
3) Check mixer operation
4) Check pH control function and setpoint

Wastewater Pumping

Wastewater pumps (P-1A & P-1B) which are housed in the new pump house addition transfer the pH adjusted wastewater to the flocculation chamber. These pumps are equipped with two control systems; a level control system, and a flow control system. The flow control system will automatically open or close the flow control valve to maintain a constant level in the sump. The sump operating level can be set by the operator. The level control system will automatically stop the lead pump on low level, restart a pump as the level rises, and start the second pump on high level. The control systems also include provisions to alternate the pumps to provide even wear, and to sound an alarm on high level.

The discharge piping from the pumps to the flocculation tank is fitted with a flow meter which provides constant flow indication and a digital readout of total flow.

Periodic checks of the pumping system should include the following;

1) Test both pumps to insure operation and flow.
2) Check flow control system level setting & valve operation.
3) Check level control system function and level setting.

Polymer Feed/Flocculation

Polymer is presently supplied to Atlantic Wire Company in a dry powder form. It is mixed with water in a day tank to provide solution which is feed to the flocculation tank. In the flocculation tank, the polymer solution is mixed with the wastewater by a slowly moving paddle type mixer.

The following items should be checked periodically;

1) Check polymer solution supply

2) Check polymer solution feed pump rate & flow

3) Check flocculation mixer for operation

Gravity Settling

For gravity settling, the Atlantic Wire Co. system employs a "Lamella" type clarifier. The Lamella clarifier is a specially designed unit which consists of a series of parallel plates installed on an angle of approximately 60 degrees. Wastewater travels between the plates at a slow rate which allows the solid particles to settle, travel down the plates and accumulate in the sludge hopper at the bottom of the clarifier. Clarified effluent from the unit flows over a weir at the outlet of clarifier and is discharged by gravity to the effluent sump where it mixes with excess cooling water and storm water. From the effluent sump, the treated wastewater flows by gravity to the Branford river.

The effluent piping system for the clarifier also includes provisions for recycling the treated wastewater back to the mill through an 8" line. As shown on the drawings, the valve to the effluent sump can be opened & treated wastewater would then flow to Reservoir #1.

Periodic checks of the Lamella clarifier should include;

1) Visually observe effluent quality
2) Check for solids carry over at weir
3) Check sludge blanket depth

Emergency Storage Tank System

The Lamella clarifier is equipped with a pH indicator alarm at the discharge end. In the event that the pH of the wastewater is outside the specified range of 6.0 to 9.0, an alarm bell will sound. This alarm bell is installed on the outside wall of the pump house. Under such conditions, the operator would close the valve to the effluent sump, and open the bypass valve to the emergency effluent storage tank (T-3). When the pH of the wastewater is again within the acceptable range, the bypass mode is discontinued. The wastewater is then "bled" into the influent sump by opening the discharge valve at the bottom of the tank. The emergency effluent storage tank is equipped with a level indicator. A dial indicator is mounted on the instrument panel in the pump house addition.

Periodic checks of the emergency storage tank system should include;

1) Check pH indicator/alarm for proper function
2) Check tank T-3 valves for proper setting; open or closed as required
3) Check tank T-3 level and level indicator reading

Sludge System

As described previously, solids accumulate in the bottom of the Lamella clarifier. This sludge material must be periodically removed from the clarifier. The sludge discharge is equipped with a

timer control valve which allows discharge of the sludge into the sludge holding tank. The timer should be set to open the valve frequently for short periods of time. Operator experience will determine the frequency and duration of valve opening required to prevent sludge from overflowing the clarifier wier. Sludge in the holding tank is allowed to settle and is periodically removed (twice/week) by tank truck. The sludge is then transported to a holding lagoon at the City of Branford Wastewater Treatment Plant. Ultimate disposal of the sludge is by the city to their sanitary land fill.

Periodic checks of the Sludge System should include;

1) Check control valve for proper function
2) Check timer control for proper sequencing and sludge flow
3) Check to insure pH probe is not exposed during sludge removal
4) Check holding tank valve settings to insure sludge supernatant is directed to influent sump
5) Check to insure that sludge withdrawal valves are closed and that hoses are positioned to drain into sump S-1
6) Check line from S-1 to influent sump to insure that it is free of solids and debris

ATTACHMENT C

Test No. [illegible]

WATER AND WASTEWATER REPORT

NAME: Atlantic Wire

ADDRESS: 1 Church Street
Branford, CT 06405

ATTN: Doug McConnell

DATE: 4/30/85

SOURCE OF SAMPLE: Sludge

DATE OF COLLECTION: 4/11/85

COLLECTED BY: Aqualogic

Parameter	Result		Parameter	Result
Mass Analysis				
Cr	0.520	g/kg		
Ni	0.526	g/kg		
CNT	0.01	mg/l		
TOC	362	mg/l		

Comments:

RECEIVED
MAY 3 - 1985

< -Less Than

Approved by:

Joseph F. Latka, Technical Director

Approved Public Health Laboratory
No. PH-0454-State of Connecticut

INDUSTRIAL WASTE
WATER TREATMENT SYSTEMS

AQUALOGIC® Inc.

ENGINEERS • CHEMISTS
DESIGNERS • MANUFACTURERS

30 DEVINE STREET • NORTH HAVEN, CT • TELEPHONE (203) 248-8959

WATER AND WASTEWATER REPORT

NAME: Atlantic Wire Company

ADDRESS: 1 Church Street
Branford, CT 06405

ATTN: Bob Wilson

DATE: 5/10/85

SOURCE OF SAMPLE: Liquid Sludge

DATE OF COLLECTION: 4/25/85

COLLECTED BY: Aqualogic

Parameter	Result		Parameter	Result
TOC	324	mg/l		
Ni	1.58	mg/l		
Cr	< 0.05	mg/l		

Comments: The above results reflect analyticals performed on EP Toxicity test leachate as per EPA Manual, "Test Methods for Evaluating Solid Waste" 1980 edition.

Approved by:

Joseph F. Latka, Technical Director

Approved Public Health Laboratory
No. PH-0454-State of Connecticut

< -Less Than

Biological Waste
Water Treatment Systems

AQUALOGIC® Inc.

ENGINEERS • CHEMISTS
DESIGNERS • MANUFACTURERS

30 DEVINE STREET • NORTH HAVEN, CT • TELEPHONE (203) 248-8959

Test No. _____

WATER AND WASTEWATER REPORT

NAME: Atlantic Wire

ADDRESS: 1 Church Street
Branford, CT 06405

ATTN: Doug McConnell

DATE: 5/30/85

SOURCE OF SAMPLE: Sludge

DATE OF COLLECTION: 5/9/85

COLLECTED BY: Aqualogic

Parameter	Result		Parameter	Result
EP Toxicity				
Ni	1.73	mg/l		
Cr	<0.05	mg/l		
TOC	359	mg/l		

Comments: The above results reflect analyticals performed on EP Toxicity test leachate as per EPA Manual, "Test Methods for Evaluating Solid Waste" 1980 edition.

Approved by:

Joseph F. Latka, Technical Director

Approved Public Health Laboratory
No. PH-0454-State of Connecticut

<-Less Than

INDUSTRIAL WASTE
WATER TREATMENT SYSTEMS

AQUALOGIC® Inc.

ENGINEERS • CHEMISTS
DESIGNERS • MANUFACTURERS

30 DEVINE STREET • NORTH HAVEN, CT • TELEPHONE (203) 248-8959

TEST NO. 570I

WATER AND WASTEWATER REPORT

NAME: Atlantic Wire

ADDRESS: 1 Church Street

Branford, CT 06405

ATT: Bob Wilson

DATE: 7/25/85

SOURCE OF SAMPLE: Sludge Sample

DATE OF COLLECTION: 6/24/85

COLLECTED BY: Aqualogic

AUG 5 1985

PARAMETER	RESULT	PARAMETER	RESULT
TOC	481.0 mg/l		

COMMENTS:

APPROVED BY:

Joseph F. Latka, Technical Director

APPROVED PUBLIC HEALTH LABORATORY
NO. PH-0454-STATE OF CONNECTICUT

< = LESS THAN

INDUSTRIAL WASTE
WATER TREATMENT SYSTEMS

AQUALOGIC® Inc.

ENGINEERS • CHEMISTS
DESIGNERS • MANUFACTURERS

30 DEVINE STREET • NORTH HAVEN, CT • TELEPHONE (203) 248-8959

ATTACHMENT D

MATERIAL SAFETY DATA SHEET

"ESSENTIALLY SIMILAR" TO OSHA FORM 20

FORM 4040 (Rev 5 84)

ADDRESS: Pennwalt Corporation
Cook's Industrial Lubricants
5 North Stiles Street
Linden, N.J. 07036

(8)

Pennwalt Product Name: Rust Preventative 4858

Pennwalt Code No.: E8J571A

Emergency Phone Number(s)
Business: 201-862-2500
Other:

Chemical Name and Molecular Formula

Complex mixture of petroleum oil, petroleum solvent and additives.

CAS No.(s): Mixture

Synonyms

Chemical Family: Petroleum Solvent

MATERIALS OR COMPONENTS	% w/w	HAZARD DATA (TLV, LD50, LC50, etc.)
Medium Aliphatic Solvent Naphtha (petroleum) (CAS # 64742-88-7)	80-90	200 ppm TWA
Heavy naphthenic petroleum oil distillate (CAS # 64741-53-3)	5-15	TLV 5 mg/M^3 (as an oil mist)

DOT: RUST PREVENTIVE COATING; COMBUSTIBLE LIQUID NA1142

Boiling Point/Range	Melting Point	Freezing Point	Molecular Weight (Calculated)
Wide Range °C °F	NA °C °F	Wide Range °C °F	NA

Specific Gravity (H_2O=1)	Vapor Pressure (mm Hg)	Vapor Density (Air=1)
0.935 @ 25 / 25 °C	NE @ °C °F	< 8

Solubility in H_2O	% Volatiles by Volume	Evaporation Rate	Appearance and Odor	Other
Negligible	86	> 1.0 ☐ Ether = 1 ☐ Water = 1 ☒ Butylacetate = 1		

Flash Point	Test Method	Flammable Limits	Autoignition Temperature/Fire Point
42 °C 108 °F	C.O.C.	Lower NE % Upper %	NE °C °F

EXTINGUISHING MEDIA
☐ Water-spray ☐ Water-fog ☐ Water stream ☒ CO_2 ☒ Dry chemical ☐ Alcohol foam ☒ Foam ☐ Earth or sand

SPECIAL FIRE FIGHTING PROCEDURES
☐ Do not enter building ☐ Allow fire to burn ☐ Water may cause frothing ☐ Do not [illegible] water ☒ Use self-contained breathing apparatus

UNUSUAL FIRE AND EXPLOSION HAZARDS
☐ Dust explosion hazard ☐ Sensitive to shock ☐ Contamination ☐ Temperature ☐ Other (specify):

STABILITY
☒ Stable ☐ Unstable

CONDITIONS CONTRIBUTING TO INSTABILITY
☐ Thermal decomposition ☐ Photo degradation ☐ Polymerization ☐ Contamination

INCOMPATIBILITY - Avoid contact with
☐ Strong acids ☐ Strong alkalis ☒ Strong oxidizers ☐ Other (specify):

HAZARDOUS DECOMPOSITION PRODUCTS - THERMAL AND OTHER (list)

Carbon monoxide may form upon incomplete combustion.

CONDITIONS TO AVOID
☐ Heat ☒ Open flames ☒ Sparks ☒ Ignition sources ☐ Other (specify):

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED
☐ Flush with water ☒ Absorb with sand or inert material ☐ Neutralize ☒ Sweep or scoop up and remove ☒ Keep upwind. Evacuate enclosed spaces. ☒ Prevent spread of spill
☐ Dispose of immediately ☒ Other (specify): Advise authorities if product has entered or may enter sewers, watercourses or extensive land areas.

WASTE DISPOSAL METHOD - *Consult federal, state, or local authorities for proper disposal procedures.*

Assure conformity with applicable disposal regulations. Dispose of absorbed material at an approved waste disposal site or facility.

CONTINUED ON REVERSE SIDE ▶

NA – Not Applicable *NE – Not Established*

Before using product, read and follow directions and precautions on product label and bulletins.

Oral (acute)

NE

Dermal (acute)

NE

Eye

NE

Inhalation (acute)

NE

Chronic, Subchronic, etc.

NE

PERMISSIBLE EXPOSURE LIMIT (Specify TLV/TWA or Ceiling (c))

ACGIH 1983 TWA 5 mg/M^3 as an oil mist | OSHA 1983 TWA 5 mg/M^3 as an oil mist | Other: Solvent Mfg. Recommd. ~~200 ppm~~

IRRITATION

- [X] Skin — [ ] Severe — [X] Moderate
- [X] Eye — [ ] Severe — [ ] Moderate — [X] Mild (transient)

CORROSIVITY

- [ ] Skin — [ ] 4 hrs. (DOT) — [ ] 24 hrs. (CPSC)
- [ ] Eye — [ ] May cause blindness

SENSITIZATION

[ ] Skin [ ] Respiratory [ ] Allergen

INHALATION EFFECTS

[ ] Narcotic effect [ ] Cyanosis [ ] Asphyxiant

LUNG EFFECTS (Specify):

OTHER (Specify):

[X] Repeated contact - skin defatter [ ] Other (Specify):

INGESTION

[ ] Induce vomiting [X] Do NOT induce vomiting [ ] Give plenty of water [X] Get medical attention [ ] Other (specify):

DERMAL

[X] Flush with soap and water [ ] Get medical attention [X] Contaminated clothing - remove & launder [ ] Contaminated shoes - destroy [ ] Other (specify):

EYE CONTACT

[X] Flush with plenty of water for at least 15 minutes [X] Get medical attention [ ] Other (specify):

INHALATION

[X] Remove to fresh air [ ] If not breathing, give artificial respiration [ ] Give oxygen [ ] Get medical attention [ ] Other (specify):

VENTILATION REQUIREMENTS — *Always maintain exposure below permissible exposure limits*

[ ] Consult an industrial hygienist or environmental health specialist [X] Local exhaust [ ] Use with adequate ventilation [ ] Check for air contaminant and oxygen deficiency

[X] Other (specify): To control to standard.

EYE

[ ] Safety glasses [ ] Face shield and goggles [X] Goggles

HAND (GLOVE TYPE)

[ ] Polyvinyl chloride [X] Neoprene [ ] Butyl rubber [ ] Natural rubber [X] Polyvinyl alcohol [ ] Poly-ethylene [ ] Other (specify):

RESPIRATOR TYPE - *Use only NIOSH approved equipment*

[ ] Self-contained [ ] Supplied air [ ] Can or cartridge gas or vapor [ ] Filter - dust, fume, mist [ ] Other (specify):

OTHER PROTECTIVE EQUIPMENT

[ ] Rubber boots [X] Apron [ ] Other (specify):

PRECAUTIONARY LABELING

[X] Wash thoroughly after handling [X] Do not get in eyes, on skin or clothing [X] Do not breathe dust, vapor, mist, gas [X] Keep container closed [X] Keep away from heat, sparks, and open flames [ ] Store in tightly closed containers

[ ] Do not store near combustibles [ ] Keep from contact with clothing and other combustible materials [X] Empty container may contain hazardous residues [ ] Use explosion proof equipment [ ] Other (specify):

Other handling and storage conditions

COMBUSTIBLE LIQUID. Avoid prolonged or repeated contact with skin. Wash thoroughly with soap and water after contact. Remove contaminated clothing. Launder before reuse.

Prepared by | **Date** 4/22/85 | **Address** | **Phone**

"The above information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse are beyond our control, Pennwalt MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. User should satisfy himself that he has all current data relevant to his particular use

[illegible]
[illegible]
[illegible]FORD, CT 06405
[illegible] Mr. [illegible]

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET (3)

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME APEX ALKALI PRODUCTS COMPANY .	EMERGENCY TELEPHONE NO. 215-483-3939
ADDRESS (*Number, Street, City, State, and ZIP Code*) MAIN & RECTOR STREETS, PHILADELPHIA, PA. 19127	
CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS APEX "SP-21" SOAP POWDER
CHEMICAL FAMILY	FORMULA

SECTION II · HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS Not a paint			BASE METAL Not a metal		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES Borax Pentahydrate	8.7		OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
This MSDS complies with Standards as set forth in 29 CFR 1910.1200(G)(2).		

SECTION III · PHYSICAL DATA

BOILING POINT (°F.)	NA	SPECIFIC GRAVITY (H_2O=1) Approx	1.09
VAPOR PRESSURE (mm Hg.)	NA	PERCENT, VOLATILE BY VOLUME (%)	2% Max.
VAPOR DENSITY (AIR=1)	NA	EVAPORATION RATE (=1)	NA
SOLUBILITY IN WATER	Soluble		
APPEARANCE AND ODOR A pale blue, granulated soap powder.			

SECTION IV · FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used) NA	FLAMMABLE LIMITS	Lel	Uel
EXTINGUISHING MEDIA Will char in a direct flame but is self-extinguishing.			
SPECIAL FIRE FIGHTING PROCEDURES			
UNUSUAL FIRE AND EXPLOSION HAZARDS None			

(Continued on reverse side)

EFFECTS OF OVEREXPOSURE

Dust may cause sneezing, respiratory irritation and eye irritation as with soap powder.

EMERGENCY AND FIRST AID PROCEDURES

Wash eyes and skin thoroughly with water. If swallowed, induce vomiting and obtain medical aid.

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	

INCOMPATABILITY *(Materials to avoid)*: No special hazards known.

HAZARDOUS DECOMPOSITION PRODUCTS: None known

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Sweep up. Wash area with water.

WASTE DISPOSAL METHOD: Split water solutions with acid. Skim off fats, and burn, reclaim or haul to dump.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION *(Specify type)*: Use dust mask when handling produces dust.

VENTILATION	LOCAL EXHAUST: Not normally needed in wire drawing operations	SPECIAL
	MECHANICAL *(General)*	OTHER

PROTECTIVE GLOVES: Not recommended

EYE PROTECTION: Recommended

OTHER PROTECTIVE EQUIPMENT

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

No special precautions.

OTHER PRECAUTIONS

LASTIC WIRE
URCH ROAD
RANFORD, CT 06405
t n Mr. bert [illegible]

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME APEX ALKALI PRODUCTS COMPANY	EMERGENCY TELEPHONE NO. 215-483-3939
ADDRESS (Number, Street, City, State, and ZIP Code) MAIN & RECTOR STREETS, PHILA., PA. 19127	
CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS APEX "SPS-90"
CHEMICAL FAMILY	FORMULA

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS Not a paint			BASE METAL Not a metal		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
This MSDS complies with Standards as set forth in 29 CFR 1910.1200(G)(2).		

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	NA	SPECIFIC GRAVITY (H_2O=1)	approx. 1.07
VAPOR PRESSURE (mm Hg.)	NA	PERCENT, VOLATILE BY VOLUME (%)	4%
VAPOR DENSITY (AIR=1)	NA	EVAPORATION RATE (______ =1)	NA
SOLUBILITY IN WATER	Soluble		
APPEARANCE AND ODOR An off-white, granulated powder with characteristic soapy odor.			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used) NA	FLAMMABLE LIMITS	Lel	Uel

EXTINGUISHING MEDIA
Will melt and burn mildly in a direct flame but ceases to burn shortly after the flame is removed.

SPECIAL FIRE FIGHTING PROCEDURES

UNUSUAL FIRE AND EXPLOSION HAZARDS None

(Continued on reverse side)

SECTION V · HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: NA

EFFECTS OF OVEREXPOSURE: Dust may cause sneezing, respiratory irritation and eye irritation as with soap powder.

EMERGENCY AND FIRST AID PROCEDURES: Wash eyes and skin thoroughly with water. If swallowed induce vomiting and obtain medical aid.

SECTION VI · REACTIVITY DATA

STABILITY			CONDITIONS TO AVOID
	UNSTABLE		
	STABLE	X	

INCOMPATABILITY *(Materials to avoid)*

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS POLYMERIZATION			CONDITIONS TO AVOID
	MAY OCCUR		
	WILL NOT OCCUR	X	

SECTION VII · SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Sweep up. Wash area with water.

WASTE DISPOSAL METHOD: Split water solutions with acid. Skim off fats and burn, reclaim or haul to dump.

SECTION VIII · SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION *(Specify type)*: Use dust mask when handling produces dust.

VENTILATION: LOCAL EXHAUST: Not normally required except for dusty drawing operations.

MECHANICAL *(General)*

OTHER

PROTECTIVE GLOVES: Not necessary

EYE PROTECTION: Recommended

OTHER PROTECTIVE EQUIPMENT

SECTION IX · SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: No special precautions.

OTHER PRECAUTIONS

TLANTIC WIRE
URCH ROAD
PORT, CT 06405
Mr. Bert Bowden

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
APEX ALKALI PRODUCTS COMPANY	215-483-3939

ADDRESS (Number, Street, City, State, and ZIP Code)
MAIN & RECTOR STREETS, PHILA., PA. 19127

CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS
	APEX "WD-26L"
CHEMICAL FAMILY	FORMULA

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS Not a paint			BASE METAL Not a metal		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES EDTA Acid	.7	N/A	OTHERS		
OTHERS Potassium Hydroxide	4.7	N/A			

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
Not considered a hazardous mixture. "WD-26L" is a liquid soap lubricant.		
It contains no diethanolnitrosamine. This MSDS complies with Standards as		
set forth in 29 CFR 1910.1200(G)(2).		

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	212°F.	SPECIFIC GRAVITY (H_2O = 1)	1.022
VAPOR PRESSURE (mm Hg.)	NA	PERCENT, VOLATILE BY VOLUME (%)	64.5
VAPOR DENSITY (AIR=1)	NA	EVAPORATION RATE (_____ = 1)	NA
SOLUBILITY IN WATER	Complete		

APPEARANCE AND ODOR A clear, pale-yellow liquid with a mild soap odor.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	FLAMMABLE LIMITS	LEL	UEL
NA			

EXTINGUISHING MEDIA Would be considered non-flammable

SPECIAL FIRE FIGHTING PROCEDURES None

UNUSUAL FIRE AND EXPLOSION HAZARDS None

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: NA

EFFECTS OF OVEREXPOSURE: None reported

EMERGENCY AND FIRST AID PROCEDURES: When splashed in the eyes, wash out thoroughly with water.

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	

INCOMPATABILITY *(Materials to avoid)*: None known

HAZARDOUS DECOMPOSITION PRODUCTS: NA

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Scoop bulk into drum. Wash down area with water.

WASTE DISPOSAL METHOD

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type): Not necessary.

VENTILATION	LOCAL EXHAUST	Not needed	SPECIAL
	MECHANICAL *(General)*		OTHER

PROTECTIVE GLOVES: Not normally used

EYE PROTECTION: Recommended

OTHER PROTECTIVE EQUIPMENT

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: No special precautions necessary with regard to safety. Avoid freezing or temperatures over 200°F.

OTHER PRECAUTIONS

LANTIC WIRE
URCH ROAD
ANFORD, CT 06405

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

t: Mr. Bert Bowden

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
APEX ALKALI PRODUCTS COMPANY	215-483-3939

ADDRESS (Number, Street, City, State, and ZIP Code)
MAIN & RECTOR STREETS, PHILADELPHIA, PA. 19127

CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS
	APEX "WSC-3" COMPOUND
CHEMICAL FAMILY	FORMULA

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS Ethylene Glycol Monomethyl Ether	5	100	FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
Not considered a hazardous mixture. Compounded of mineral oil, emulsifier,		
fatty ester, soap and coupling agent. This MSDS complies with Standards		
as set forth in 29 CFR 1910.1200(G)(2).		

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N.A.	SPECIFIC GRAVITY (H_2O=1)	.92
VAPOR PRESSURE (mm Hg.)	N.A.	PERCENT, VOLATILE BY VOLUME (%)	Low
VAPOR DENSITY (AIR=1)	N.A.	EVAPORATION RATE (=1)	N.A.
SOLUBILITY IN WATER	Dispersible		

APPEARANCE AND ODOR A ligh colored oil with mild characteristic odor.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	FLAMMABLE LIMITS	Lel	Uel
>220°F. C.O.C.			

EXTINGUISHING MEDIA CO_2 or Foam

SPECIAL FIRE FIGHTING PROCEDURES As with other lubricating oils.

UNUSUAL FIRE AND EXPLOSION HAZARDS Normal for petroleum products of this flash point.

Use as an emulsion in water practically eliminates in-use hazard.

(Continued on reverse side)

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: N D

EFFECTS OF OVEREXPOSURE: No detrimental effects have been reported to us.

EMERGENCY AND FIRST AID PROCEDURES: Wash hands after use and use good skin cream to avoid chapping. Use good personal hygiene. Wash contaminated eyes thoroughly with water.

SECTION VI - REACTIVITY DATA

STABILITY			CONDITIONS TO AVOID
	UNSTABLE		
	STABLE	X	

INCOMPATABILITY *(Materials to avoid)*

HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO_2, Sulfur bearing gases.

HAZARDOUS POLYMERIZATION			CONDITIONS TO AVOID
	MAY OCCUR		
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Absorb with floor dry. Wash area with water.

WASTE DISPOSAL METHOD: Evaporative concentration of the emulsion. Burn oil residue in equipment with fume scrubbers.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION *(Specify type)*: Not required

VENTILATION		
	LOCAL EXHAUST: Recommended	SPECIAL
	MECHANICAL *(General)*	OTHER

PROTECTIVE GLOVES: Not required

EYE PROTECTION: Recommended

OTHER PROTECTIVE EQUIPMENT: Rubber apron

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Normal for soluble oil lubricants. Emulsion is subject to bacterial attack. If suspect, treat with APEX "BACTISOL"

OTHER PRECAUTIONS: No special precautions.

NTIC WIRE
HURCH ROAD
RANFORD, CT 06405
ATTN: Mr. Bert Bowden

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
APEX ALKALI PRODUCTS COMPANY	215-483-3939

ADDRESS (Number, Street, City, State, and ZIP Code)
Main & Rector Sts., Phila., Pa. 19127

CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS
CHEMICAL FAMILY	APEX "POLYKOTE 8X"
	FORMULA

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS Not a paint			BASE METAL Not a metal		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
(None)		
This MSDS complies with Standards as set forth in 29 CFR 1910.1200(G)(2).		

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N.A.	SPECIFIC GRAVITY (H_2O=1)	Approx. 1.5
VAPOR PRESSURE (mm Hg.)	N.A.	PERCENT, VOLATILE BY VOLUME (%)	0
VAPOR DENSITY (AIR=1)	N.A.	EVAPORATION RATE (_____ =1)	N.A.
SOLUBILITY IN WATER	Complete		
APPEARANCE AND ODOR			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	N.A.	FLAMMABLE LIMITS	LEL	UEL
EXTINGUISHING MEDIA	N.A.	Non-Flammable		
SPECIAL FIRE FIGHTING PROCEDURES	Non-Flammable			
UNUSUAL FIRE AND EXPLOSION HAZARDS	None			

(Continued on reverse side)

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	N.A.
EFFECTS OF OVEREXPOSURE	No reported ill effects from skin contact. Mildly alkaline.
EMERGENCY AND FIRST AID PROCEDURES	Wash affected areas with water.

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	

INCOMPATABILITY *(Materials to avoid)* None

HAZARDOUS DECOMPOSITION PRODUCTS None

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Sweep up powder -- Wash area with water.

WASTE DISPOSAL METHOD Neutralize with acid and precipitate with alum or lime and polyelectrolytes or use evaporation procedures.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION *(Specify Type)* Use dust mask when handling powder.

VENTILATION	LOCAL EXHAUST None needed for solution.	SPECIAL
	MECHANICAL *(General)*	OTHER

PROTECTIVE GLOVES Recommended	EYE PROTECTION Face mask or goggles

OTHER PROTECTIVE EQUIPMENT

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING No special precautions.

OTHER PRECAUTIONS

PENNWALT CORPORATION
CHEMICALS • EQUIPMENT • HEALTH PRODUCTS

R.H.MILLER
P.O. Box 350, 43 James St., Homer, New York 13077 • (607) 749-2652

(2)

April 15, 1985

Mr. Bert Bowden
ATLANTIC WIRE
1 Church Street
Branford, CT 06405

Dear Mr. Bowden:

Please find enclosed MSDS sheets for the R.H.Miller products that you requested on April 15, 1985

I am not authorized to give you the individual constituents of any R.H.Miller products. If the MSDS's do not complete answer your questions please contact me in Homer, NY.

Sincerely,

Richard A Neal

Richard A. Neal
Director of R & D

RAN:sae
Enclosures
cc: J. Zito
Files

MATERIAL SAFETY DATA SHEET

"ESSENTIALLY SIMILAR" TO OSHA FORM 20

FORM 4040 (Rev. 6-81)

ADDRESS: Pennwalt Corporation
900 First Ave
King of Prussia, PA 19406

Emergency Phone Number(s)
Business: (215) 337-6639
Other: (215) 946-2826

Pennwalt Product Name: This applies to the following product:

Pennwalt Code No.: R34B01

Chemical Name and Molecular Formula

Code	Name
4602	Steelekin 27M
5022	46

CAS No.(s):

Synonyms: Cleaner

Chemical Family: Strong Alkali

MATERIALS OR COMPONENTS	% w/w	HAZARD DATA (TLV, LD50, LC50, etc.)
Sodium Hydroxide (1310-73-2)	50 - 60.0	TWA 2 mg/m^3 (C)

Caustic Soda, Dry, Mixture; Corrosive Material, UN1823;

Compounds, Cleaning Powder or Dry

Boiling Point/Range	Melting Point	Freezing Point	Molecular Weight (Calculated)
°C NA °F	ND °C °F	NA °C °F	Mixture

Specific Gravity (H_2O=1)	Vapor Pressure (mm Hg)	Vapor Density (Air=1)
NA @ / °C	Nil @ °C °F	Nil

Solubility in H_2O	% Volatiles by Volume	Evaporation Rate
Soluble	Nil	NA ☐ Ether = 1 ☐ Water = 1 ☐ Butylacetate = 1

Appearance and Odor: White granular solid

Other:

Flash Point	Test Method	Flammable Limits	Autoignition Temperature/Fire Point
°C °F	None	Lower % Upper NA %	°C NA °F

EXTINGUISHING MEDIA

☐ Water-spray ☒ Water-fog ☒ Water stream ☒ CO_2 ☒ Dry chemical ☐ Alcohol foam ☒ Foam ☐ Earth or sand

SPECIAL FIRE FIGHTING PROCEDURES

☐ Do not enter building ☐ Allow fire to burn ☐ Water may cause frothing ☐ Do not use water — Wear Self Contained Breathing Apparatus

UNUSUAL FIRE AND EXPLOSION HAZARDS

☐ Dust explosion hazard ☐ Sensitive to shock ☐ Contamination ☐ Temperature ☐ Other (specify):

STABILITY

☒ Stable ☐ Unstable

CONDITIONS CONTRIBUTING TO INSTABILITY

☐ Thermal decomposition ☐ Photo degradation ☐ Polymerization ☐ Contamination

INCOMPATIBILITY - Avoid contact with

☒ Strong acids ☐ Strong alkalis ☐ Strong oxidizers ☐ Other (specify):

HAZARDOUS DECOMPOSITION PRODUCTS - THERMAL AND OTHER (list)

Thermal-Oxides of Carbon; Sulfur Compounds

CONDITIONS TO AVOID

☐ Heat ☐ Open flames ☐ Sparks ☐ Ignition sources ☐ Other (specify):

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

☐ Flush with water ☐ Absorb with sand or inert material ☐ Neutralize ☐ Sweep or scoop up and remove ☐ Keep upwind. Evacuate enclosed spaces. ☐ Prevent spread or spill

☐ Dispose of immediately ☒ Other (specify): Flush to chemical waste treatment

WASTE DISPOSAL METHOD - *Consult federal, state, or local authorities for proper disposal procedures.*

CONTINUED ON REVERSE SIDE ▶

NA - Not Applicable.

TOXICITY

Dermal (acute)

Eye

Inhalation (acute)

Chronic, Subchronic, etc.

Effects of Exposure

PERMISSIBLE EXPOSURE LIMIT (Specify if TLV/TWA or Ceiling (c))

ACGIH 19___ | OSHA 19___ | Other: NA

IRRITATION

☐ Skin ☐ Severe ☐ Moderate

☐ Eye ☐ Severe ☐ Moderate

CORROSIVITY

☒ Skin ☒ 4 hrs. (DOT) ☐ 24 hrs. (CPSC)

☒ Eye ☒ May cause blindness ☐ Mild (transient)

SENSITIZATION

☐ Skin ☐ Respiratory ☐ Allergen

INHALATION EFFECTS

☐ Narcotic affect ☐ Cyanosis ☐ Asphyxiant

LUNG EFFECTS (Specify):

OTHER (Specify):

☐ Repeated contact - skin defatter ☐ Other (Specify):

Emergency First Aid

INGESTION

☐ Induce vomiting ☒ Do NOT induce vomiting ☒ Give plenty of water ☒ Get medical attention ☐ Other (specify):

DERMAL

☒ Flush with soap and water ☒ Get medical attention ☒ Contaminated clothing - remove & launder ☒ Contaminated shoes - destroy ☐ Other (specify):

EYE CONTACT

☒ Flush with plenty of water for at least 15 minutes ☒ Get medical attention ☒ Other (specify): Eyes - Hold eyelids open while flushing

INHALATION

☐ Remove to fresh air ☐ If not breathing, give artificial respiration ☐ Give oxygen ☐ Get medical attention ☐ Other (specify):

VENTILATION REQUIREMENTS — *Always maintain exposure below permissible exposure limits*

☐ Consult an industrial hygienist or environmental health specialist ☐ Local exhaust ☐ Use with adequate ventilation ☐ Check for air contaminant and oxygen deficiency

☐ Other (specify):

EYE

☐ Safety glasses ☒ Face shield ☒ Goggles

HAND (GLOVE TYPE)

☐ Polyvinyl chloride ☒ Neoprene ☒ Butyl rubber ☒ Natural rubber ☐ Polyvinyl alcohol ☐ Poly-ethylene ☐ Other (specify):

RESPIRATOR TYPE - *Use only NIOSH approved equipment*

☐ Self-contained ☐ Supplied air ☐ Can or cartridge gas or vapor ☒ Filter - dust, fume, mist ☐ Other (specify):

OTHER PROTECTIVE EQUIPMENT

☒ Rubber boots ☒ Apron ☐ Other (specify):

PRECAUTIONARY LABELING

☒ Wash thoroughly after handling ☒ Do not get in eyes, on skin or clothing ☒ Do not breathe dust, vapor, mist, gas ☐ Keep container closed ☐ Keep away from heat, sparks, and open flames ☐ Store in tightly closed containers

☐ Do not store near combustibles ☐ Keep from contact with clothing and other combustible materials ☐ Empty container may contain hazardous residues ☐ Use explosion proof equipment ☐ Other (specify):

Other handling and storage conditions

Minimum contact with this and all chemicals is recommended as a good general policy to follo

ed by: h D. McLaughlin, Jr. | Date: 3-20-85 | Address: 900 First Ave., King of Prussia, PA 19406 | Phone: (215) 337-6634

MATERIAL SAFETY DATA SHEET

PENNWALT

"ESSENTIALLY SIMILAR" TO OSHA FORM 20

FORM 4040 (Rev. 8-81)

ADDRESS: Pennwalt Corporation
900 First Ave.
King of Prussia, PA 19406

Emergency Phone Number(s)
Business: (215) 337-6639
Other: (215) 946-2826

PRODUCT IDENTIFICATION

Pennwalt Product Name: This applies to the following product:

Pennwalt Code No.: R29B01

Chemical Name and Molecular Formula

Code	Name
4794	Copperskin 370A
4612	Steelskin 1278

CAS No.(s):

Synonyms:

Chemical Family:

HAZARDOUS INGREDIENTS

MATERIALS OR COMPONENTS	% w/w	HAZARD DATA (TLV, LD50, LC50, etc.)
Mineral Oil (8012-95-1)	20-40	TWA 5 mg/m^3 (Mist)
Diethanol Amine (111-42-2)	2-4	TWA 15 mg/m^3

SHIPPING INFORMATION

Not Regulated by Department of Transportation

PHYSICAL PROPERTIES

Boiling Point/Range	Melting Point	Freezing Point	Molecular Weight (Calculated)
above 200 °F	NA °C °F	ND °C °F	Mixture

Specific Gravity (H_2O=1)	Vapor Pressure (mm Hg)	Vapor Density (Air=1)
ND @ / °C	ND @ °C °F	ND

Solubility in H_2O	% Volatiles by Volume	Evaporation Rate	Other
Soluble	ND	ND ☐ Ether = 1 ☐ Water = 1 ☐ Butylacetate = 1	

Appearance and Odor: Amber Liquid

FIRE AND EXPLOSION DATA

Flash Point	Test Method	Flammable Limits	Autoignition Temperature/Fire Point
°C °F	None	Lower % Upper NA %	°C NA °F

EXTINGUISHING MEDIA

☐ Water-spray ☒ Water-fog ☐ Water stream ☒ CO_2 ☒ Dry chemical ☐ Alcohol foam ☒ Foam ☐ Earth or sand

SPECIAL FIRE FIGHTING PROCEDURES

☐ Do not enter building ☐ Allow fire to burn ☐ Water may cause frothing ☐ Do not use water — Wear Self Contained Breathing Apparatus

UNUSUAL FIRE AND EXPLOSION HAZARDS

☐ Dust explosion hazard ☐ Sensitive to shock ☐ Contamination ☐ Temperature ☐ Other (specify):

REACTIVITY DATA

STABILITY

☒ Stable ☐ Unstable

CONDITIONS CONTRIBUTING TO INSTABILITY

☐ Thermal decomposition ☐ Photo degradation ☐ Polymerization ☐ Contamination

INCOMPATIBILITY - Avoid contact with

☒ Strong acids ☐ Strong alkalis ☒ Strong oxidizers ☐ Other (specify):

HAZARDOUS DECOMPOSITION PRODUCTS - THERMAL AND OTHER (list)

Thermal-Oxides of Carbon; Sulfur and Nitrogen Compounds

CONDITIONS TO AVOID

☐ Heat ☐ Open flames ☐ Sparks ☐ Ignition sources ☐ Other (specify):

SPILL OR LEAK

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

☒ Flush with water ☒ Absorb with sand or inert material ☐ Neutralize ☐ Sweep or scoop up and remove ☐ Keep upwind. Evacuate enclosed spaces. ☐ Prevent spread or spill

☐ Dispose of immediately ☒ Other (specify): Flush to chemical sewer

WASTE DISPOSAL METHOD - *Consult federal, state, or local authorities for proper disposal procedures.*

CONTINUED ON REVERSE SIDE ▶

N – *Not Applicable.*

TOXICITY

Oral (acute): Judged to be a low order of toxicity

Dermal (acute): "

Eye: Irritant

Inhalation (acute):

Chronic, Subchronic, etc.:

HEALTH HAZARD INFORMATION

Effects of Exposure

PERMISSIBLE EXPOSURE LIMIT (Specify if TLV/TWA or Ceiling (c)):
ACGIH 19__ | OSHA 19__ | Other:

IRRITATION: [ ] Skin [X] Eye — [ ] Severe [ ] Severe — [ ] Moderate [X] Moderate — [ ] Mild (transient)

CORROSIVITY: [ ] Skin [ ] Eye — [ ] 4 hrs. (DOT) [ ] May cause blindness — [ ] 24 hrs. (CPSC)

SENSITIZATION: [ ] Skin [ ] Respiratory [ ] Allergen

INHALATION EFFECTS: [ ] Narcotic effect [ ] Cyanosis [ ] Asphyxiant

LUNG EFFECTS (Specify):

OTHER (Specify): [X] Repeated contact - skin defatter [ ] Other (Specify):

Emergency First Aid

INGESTION: [ ] Induce vomiting [X] Do NOT induce vomiting [X] Give plenty of water [X] Get medical attention [ ] Other (specify):

DERMAL: [X] Flush with soap and water [ ] Get medical attention [ ] Contaminated clothing - remove & launder [ ] Contaminated shoes - destroy [ ] Other (specify):

EYE CONTACT: [X] Flush with plenty of water for at least 15 minutes [X] Get medical attention [X] Other (specify): Eyes - Hold eyelids open while flushing

INHALATION: [ ] Remove to fresh air [ ] If not breathing, give artificial respiration [ ] Give oxygen [ ] Get medical attention [ ] Other (specify):

SPECIAL PROTECTION INFORMATION

VENTILATION REQUIREMENTS — *Always maintain exposure below permissible exposure limits*

[ ] Consult an industrial hygienist or environmental health specialist [ ] Local exhaust [ ] Use with adequate ventilation [ ] Check for air contaminant and oxygen deficiency

[X] Other (specify): Sufficient to maintain level below the specified Hazardous Ingredient(s) concentration limit.

EYE: [X] Safety glasses [X] Face shield [X] Goggles

HAND (GLOVE TYPE): [ ] Polyvinyl chloride [ ] Neoprene [X] Butyl rubber [X] Natural rubber [ ] Polyvinyl alcohol [ ] Poly-ethylene [ ] Other (specify):

RESPIRATOR TYPE - *Use only NIOSH approved equipment*

[ ] Self-contained [ ] Supplied air [ ] Can or cartridge gas or vapor [ ] Filter - dust, fume, mist [ ] Other (specify):

OTHER PROTECTIVE EQUIPMENT

[ ] Rubber boots [ ] Apron [ ] Other (specify):

SPECIAL PRECAUTIONS

PRECAUTIONARY LABELING

[X] Wash thoroughly after handling [X] Do not get in eyes, on skin or clothing [X] Do not breathe dust, vapor, mist, gas [ ] Keep container closed [ ] Keep away from heat, sparks, and open flames [ ] Store in tightly closed containers

[ ] Do not store near combustibles [ ] Keep from contact with clothing and other combustible materials [ ] Empty container may contain hazardous residues [ ] Use explosion proof equipment [ ] Other (specify):

Other handling and storage conditions:

Minimum contact with this and all chemicals is recommended as a good general policy to follo

Prepared by: Hugh D. McLaughlin, Jr. Date: 3-20-85 | Address: 900 First Ave., King of Prussia, PA 19406 | Phone: (215) 337-6634

PLEASE NOTE ▶ "The above information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject t change and the conditions of handling and use, or misuse are beyond our control, Pennwalt MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. User should satisfy himself that he has all current data relevant to his particular use

MATERIAL SAFETY DATA SHEET

"ESSENTIALLY SIMILAR" TO OSHA FORM 20

FORM 4040 (Rev. 8-81)

ADDRESS: Pennwalt Corporation
900 First Ave.
King of Prussia, PA 19406

Emergency Phone Number(s)
Business: (215) 337-6639
Other: (215) 946-2826

Pennwalt Product Name: This applies to the following products:

Pennwalt Code No.: R05A-01

Chemical Name and Molecular Formula

Code	Name	Code	Name
4633	Steelskin 75	4607	Steelskin 58
4850	Steelskin 10	4644	Steelskin 76-2
4834	Steelskin K 4	4664	Steelskin 7650

Synonyms: Metalworking Compound

CAS No.(s): Mixture

Chemical Family: Alkali

MATERIALS OR COMPONENTS	% w/w	HAZARD DATA (TLV, LD50, LC50, etc.)
Calcium Hydroxide (1305-62-0)	30-60	TWA 5 mg/m^3
Glycerin Mist (56-81-5)	4-6	TLV 10 mg/m^3 (Total Dust)

Not regulated by Department of Transportation

Boiling Point/Range	Melting Point	Freezing Point	Molecular Weight (Calculated)
NA °C °F	ND °C °F	NA °C °F	Mixture

Specific Gravity (H_2O=1)	Vapor Pressure (mm Hg)	Vapor Density (Air=1)
NA @ / °C	Nil @ °C °F	NA

Solubility in H_2O	% Volatiles by Volume	Evaporation Rate	Appearance and Odor	Other
Insoluble	Nil	NA ☐ Ether = 1 ☐ Water = 1 ☐ Butylacetate = 1	Off white powder	

Flash Point	Test Method	Flammable Limits	Autoignition Temperature/Fire Point
None °C °F		Lower NA % Upper %	°C NA °F

EXTINGUISHING MEDIA
☐ Water-spray ☒ Water-fog ☒ Water stream ☐ CO_2 ☐ Dry chemical ☐ Alcohol foam ☐ Foam ☐ Earth or sand NA

SPECIAL FIRE FIGHTING PROCEDURES
☐ Do not enter building ☐ Allow fire to burn ☐ Water may cause frothing ☐ Do not use water NA

UNUSUAL FIRE AND EXPLOSION HAZARDS
☒ Dust explosion hazard ☐ Sensitive to shock ☐ Contamination ☐ Temperature ☒ Other (specify): Explosive limit=0.5 oz/cu.ft.

STABILITY
☒ Stable ☐ Unstable

CONDITIONS CONTRIBUTING TO INSTABILITY
☐ Thermal decomposition ☐ Photo degradation NA ☐ Polymerization ☐ Contamination

INCOMPATIBILITY - Avoid contact with
☒ Strong acids ☐ Strong alkalis ☒ Strong oxidizers ☐ Other (specify):

HAZARDOUS DECOMPOSITION PRODUCTS - THERMAL AND OTHER (list)
Thermal - Oxides of Carbon

CONDITIONS TO AVOID
☐ Heat ☐ Open flames ☒ Sparks ☒ Ignition sources ☒ Other (specify): Use good housekeeping to minimize dust buildup on overhead rafters, pipes, etc.

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED
☐ Flush with water ☐ Absorb with sand or inert material ☐ Neutralize ☒ Sweep or scoop up and remove ☐ Keep upwind. Evacuate enclosed spaces. ☐ Prevent spread of spill
☐ Dispose of immediately ☒ Other (specify): Flush to chemical waste treatment

WASTE DISPOSAL METHOD - *Consult federal, state, or local authorities for proper disposal procedures.*
Landfill

CONTINUED ON REVERSE SIDE ▶

NA = Not Applicable.

Oral (acute) ... precautions on product label and bulletins.

Judged to be a low order of toxicity

Dermal (acute)

"

Eye

Irritant

Inhalation (acute)

May cause minor irritation to mucous membrane

Chronic, Subchronic, etc.

NA

PERMISSIBLE EXPOSURE LIMIT (Specify if TLV/TWA or Ceiling [c])

ACGIH 19__ see reverse | OSHA 19__ see reverse | Other: NA

IRRITATION

[ ] Skin [X] Eye — [ ] Severe [ ] Severe — [ ] Moderate [X] Moderate [ ] Mild (transient)

CORROSIVITY

NA

[ ] Skin [ ] Eye — [ ] 4 hrs. (DOT) [ ] May cause blindness [ ] 24 hrs. (CPSC)

SENSITIZATION

[ ] Skin NA [ ] Respiratory [ ] Allergen

INHALATION EFFECTS

[ ] Narcotic effect NA [ ] Cyanosis [ ] Asphyxiant

LUNG EFFECTS (Specify):

NA

OTHER (Specify):

[ ] Repeated contact - skin defatter [ ] Other (Specify): NA

INGESTION

[ ] Induce vomiting [X] Do NOT induce vomiting [X] Give plenty of water [X] Get medical attention [ ] Other (specify):

DERMAL

[X] Flush with soap and water [ ] Get medical attention [ ] Contaminated clothing - remove & launder [ ] Contaminated shoes - destroy [ ] Other (specify):

EYE CONTACT

[X] Flush with plenty of water for at least 15 minutes [X] Get medical attention [X] Other (specify): Hold eyelids open while flushing

INHALATION

[ ] Remove to fresh air [ ] If not breathing, give artificial respiration [ ] Give oxygen [ ] Get medical attention [ ] Other (specify):

VENTILATION REQUIREMENTS — *Always maintain exposure below permissible exposure limits*

[ ] Consult an industrial hygienist or environmental health specialist [ ] Local exhaust [ ] Use with adequate ventilation [ ] Check for air contaminant and oxygen deficiency

[X] Other (specify): Sufficient to maintain dust level below 0.5 oz/cu.ft. and the specified Hazardous ingredient(s) concentration limit.

EYE

[X] Safety glasses [ ] Face shield [ ] Goggles

HAND (GLOVE TYPE)

[ ] Polyvinyl chloride [X] Neoprene [X] Natural rubber [X] Butyl rubber [ ] Polyvinyl alcohol [X] Poly-ethylene [X] Other (specify): Gloves are generally recommended for prolonged repeated contact of any chemical.

RESPIRATOR TYPE - *Use only NIOSH approved equipment*

[ ] Self-contained [ ] Supplied air [ ] Can or cartridge gas or vapor [X] Filter - dust, fume, mist [X] Other (specify): If concentration level is exceeded.

OTHER PROTECTIVE EQUIPMENT

[ ] Rubber boots [ ] Apron [ ] Other (specify): NA

PRECAUTIONARY LABELING

[ ] Wash thoroughly after handling [X] Do not get in eyes, on skin or clothing [X] Do not breathe dust, vapor, mist, gas [ ] Keep container closed [X] Keep away from heat, sparks, and open flames [ ] Store in tightly closed containers

[ ] Do not store near combustibles [ ] Keep from contact with clothing and other combustible materials [ ] Empty container may contain hazardous residues [ ] Use explosion proof equipment [ ] Other (specify):

Other handling and storage conditions

Minimum contact with this and all chemicals is recommended as a good general policy to foll

Date	Address	Phone
D. McLaughlin, Jr. 3-20-85	900 First Ave., King of Prussia, PA 19406	(215)337-6634

"The above information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse are beyond our control, Pennwalt MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. User should satisfy himself that he has all current data relevant to

MATERIAL SAFETY DATA SHEET

"ESSENTIALLY SIMILAR" TO OSHA FORM 20

FORM 4040 (Rev. 8-81)

ADDRESS: Pennwalt Corporation
900 First Ave.
King of Prussia, PA 19406

Emergency Phone Number(s)
Business: (215) 337-6639
Other: (215) 946-2826

PRODUCT IDENTIFICATION

Pennwalt Product Name: This applies to the following products:

Pennwalt Code No.: R40A01

Chemical Name and Molecular Formula

Code	Name
4700	Steelskin 1356G
4891	Steelskin 1356GT

CAS No.(s):

Synonyms: Metalworking Compound

Chemical Family: Lubricant

HAZARDOUS INGREDIENTS

MATERIALS OR COMPONENTS	% w/w	HAZARD DATA (TLV, LD50, LC50, etc.)
Molybdenum Disulfide (7439-98-7)	6.0	TWA 10 mg/m^3 (As Mo)
MICA (12001-26-2)	10.0	TLV 0.3 mg/m^3 (Respirable Dust)

SHIPPING INFORMATION

Not Regulated by Department of Transportation

PHYSICAL PROPERTIES

Boiling Point/Range	Melting Point	Freezing Point	Molecular Weight (Calculated)
°C ND °F	NA °C °F	ND °C °F	Mixture

Specific Gravity (H_2O=1)	Vapor Pressure (mm Hg)	Vapor Density (Air=1)
ND @ / °C	NA @ °C °F	NA

Solubility in H_2O	% Volatiles by Volume	Evaporation Rate
Soluble	ND	NA ☐ Ether = 1 ☐ Water = 1 ☐ Butylacetate = 1

Appearance and Odor: Gray Paste

Other:

FIRE AND EXPLOSION DATA

Flash Point	Test Method	Flammable Limits	Autoignition Temperature/Fire Point
°C °F	None	Lower % Upper NA %	°C NA °F

EXTINGUISHING MEDIA

☐ Water-spray ☐ Water-fog ☐ Water stream ☒ CO_2 ☒ Dry chemical ☐ Alcohol foam ☒ Foam ☐ Earth or sand

SPECIAL FIRE FIGHTING PROCEDURES

☐ Do not enter building ☐ Allow fire to burn ☐ Water may cause frothing ☐ Do not use water Wear Self Contained Breathing Apparatus

UNUSUAL FIRE AND EXPLOSION HAZARDS

☐ Dust explosion hazard ☐ Sensitive to shock ☐ Contamination ☐ Temperature ☐ Other (specify):

REACTIVITY DATA

STABILITY

☒ Stable ☐ Unstable

CONDITIONS CONTRIBUTING TO INSTABILITY

☐ Thermal decomposition ☐ Photo degradation ☐ Polymerization ☐ Contamination

INCOMPATIBILITY - Avoid contact with

☒ Strong acids ☐ Strong alkalis ☐ Strong oxidizers ☐ Other (specify):

HAZARDOUS DECOMPOSITION PRODUCTS - THERMAL AND OTHER (list)

Thermal-Oxides of Carbon; Sulfur Compounds

CONDITIONS TO AVOID

☐ Heat ☐ Open flames ☐ Sparks ☐ Ignition sources ☐ Other (specify):

SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

☐ Flush with water ☒ Absorb with sand or inert material ☐ Neutralize ☐ Sweep or scoop up and remove ☐ Keep upwind. Evacuate enclosed spaces. ☐ Prevent spread or spill ☐ Dispose of immediately ☐ Other (specify):

WASTE DISPOSAL METHOD

WASTE DISPOSAL METHOD - *Consult federal, state, or local authorities for proper disposal procedures.*

CONTINUED ON REVERSE SIDE ▶

NA – *Not Applicable.*

Before using product, read and follow directions and precautions on product label and bulletins.

Oral (acute)

Judged to be a low order of toxicity

Dermal (acute)

Eye

Irritant

Inhalation (acute)

Chronic, Subchronic, etc.

PERMISSIBLE EXPOSURE LIMIT (Specify if TLV/TWA or Ceiling (c))

ACGIH 19__ | OSHA 19__ | Other:

IRRITATION

- [ ] Skin — [ ] Severe [ ] Severe
- [X] Eye — [ ] Moderate [X] Moderate [ ] Mild (transient)

CORROSIVITY

- [ ] Skin — [ ] 4 hrs. (DOT)
- [ ] Eye — [ ] May cause blindness
- [ ] 24 hrs. (CPSC)

SENSITIZATION

[ ] Skin [ ] Respiratory [ ] Allergen

INHALATION EFFECTS

[ ] Narcotic effect [ ] Cyanosis [ ] Asphyxiant

LUNG EFFECTS (Specify):

OTHER (Specify):

[X] Repeated contact - skin defatter [ ] Other (Specify):

Effects of Exposure

INGESTION

[ ] Induce vomiting [X] Do NOT induce vomiting [X] Give plenty of water [X] Get medical attention [ ] Other (specify):

DERMAL

[X] Flush with soap and water [ ] Get medical attention [ ] Contaminated clothing - remove & launder [ ] Contaminated shoes - destroy [ ] Other (specify):

EYE CONTACT

[X] Flush with plenty of water for at least 15 minutes [X] Get medical attention [X] Other (specify): Eyes - Hold eyelids open while flushing

INHALATION

[X] Remove to fresh air [ ] If not breathing, give artificial respiration [ ] Give oxygen [ ] Get medical attention [ ] Other (specify):

Emergency First Aid

VENTILATION REQUIREMENTS — *Always maintain exposure below permissible exposure limits*

[ ] Consult an industrial hygienist or environmental health specialist [X] Local exhaust [ ] Use with adequate ventilation [ ] Check for air contaminant and oxygen deficiency

[X] Other (specify): Sufficient to maintain level below the specified Hazardous Ingredient(s) concentration limit.

EYE

[X] Safety glasses [X] Goggles [ ] Face shield

HAND (GLOVE TYPE)

[ ] Polyvinyl chloride [ ] Neoprene [X] Natural rubber [X] Butyl rubber [ ] Polyvinyl alcohol [ ] Poly-ethylene [ ] Other (specify):

RESPIRATOR TYPE - *Use only NIOSH approved equipment*

[ ] Self-contained [ ] Supplied air [ ] Can or cartridge gas or vapor [X] Filter - dust, fume, mist [ ] Other (specify):

OTHER PROTECTIVE EQUIPMENT

[ ] Rubber boots [ ] Apron [ ] Other (specify):

INFORMATION

PRECAUTIONARY LABELING

[X] Wash thoroughly after handling [X] Do not get in eyes, on skin or clothing [X] Do not breathe dust, vapor, mist, gas [ ] Keep container closed [ ] Keep away from heat, sparks, and open flames [ ] Store in tightly closed containers

[ ] Do not store near combustibles [ ] Keep from contact with clothing and other combustible materials [ ] Empty container may contain hazardous residues [ ] Use explosion proof equipment [ ] Other (specify):

PRECAUTIONS

Other handling and storage conditions

Minimum contact with this and all chemicals is recommended as a good general policy to follow.

Prepared by

gh D. McLaughlin, Jr. 3-20-85

Address

900 First Ave., King of Prussia, PA 19406

Phone

(215) 337-6634

MATERIAL SAFETY DATA SHEET

"ESSENTIALLY SIMILAR" TO OSHA FORM 20

FORM 4040 (Rev. 8-81)

ADDRESS: Pennwall Corporation
900 First Ave.
King of Prussia, PA 19406

Emergency Phone Number(s)
Business: (215) 337-6639
Other: (215) 946-2826

PRODUCT IDENTIFICATION

Pennwall Product Name: This applies to the following products:

Pennwall Code No.: R09A-01

Chemical Name and Molecular Formula

Code	Name	Code	Name
4703	Steelskin ABC	4685	Steelskin Additive
4637	Steelskin HS		
4704	Steelskin Z		

Synonyms: Metalworking Compound

CAS No.(s): Mixture

Chemical Family: Alkali

HAZARDOUS INGREDIENTS

MATERIALS OR COMPONENTS	% w/w	HAZARD DATA (TLV, LD50, LC50, etc.)
Calcium Hydroxide (1305-62-0)	50-70	TWA 5 mg/m^3
Mineral Oil (8012-95-1)	15-40	TWA 5 mg/m^3

SHIPPING INFORMATION

Not regulated by Department of Transportation

PHYSICAL PROPERTIES

Boiling Point/Range	Melting Point	Freezing Point	Molecular Weight (Calculated)
NA °C °F	ND °C °F	NA °C °F	Mixture

Specific Gravity (H_2O=1)	Vapor Pressure (mm Hg)	Vapor Density (Air=1)
NA @ / °C	Nil @ °C °F	NA

Solubility in H_2O	% Volatiles by Volume	Evaporation Rate	Appearance and Odor	Other
Insoluble	Nil	NA ☐ Ether = 1 ☐ Water = 1 ☐ Butylacetate = 1	Off white grease	

FIRE AND EXPLOSION DATA

Flash Point	Test Method	Flammable Limits	Autoignition Temperature/Fire Point
None °C °F		Lower NA % Upper %	°C NA °F

EXTINGUISHING MEDIA

☐ Water-spray ☒ Water-fog ☐ Water stream ☐ CO_2 ☐ Dry chemical ☐ Alcohol foam ☐ Foam ☐ Earth or sand

SPECIAL FIRE FIGHTING PROCEDURES

☐ Do not enter building ☐ Allow fire to burn ☐ Water may cause frothing ☐ Do not use water

UNUSUAL FIRE AND EXPLOSION HAZARDS

☐ Dust explosion hazard ☐ Sensitive to shock ☐ Contamination ☐ Temperature ☐ Other (specify):

REACTIVITY DATA

STABILITY

☒ Stable ☐ Unstable

CONDITIONS CONTRIBUTING TO INSTABILITY

☐ Thermal decomposition ☐ Photo degradation ☐ Polymerization ☐ Contamination

INCOMPATIBILITY - Avoid contact with

☒ Strong acids ☐ Strong alkalis ☒ Strong oxidizers ☐ Other (specify):

HAZARDOUS DECOMPOSITION PRODUCTS - THERMAL AND OTHER (list)

Thermal-Oxides of Carbon

CONDITIONS TO AVOID

☐ Heat ☐ Open flames ☐ Sparks ☐ Ignition sources ☐ Other (specify):

SPILL OR LEAK

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

☐ Flush with water ☐ Absorb with sand or inert material ☐ Neutralize ☐ Sweep or scoop up and remove ☐ Keep upwind. Evacuate enclosed spaces. ☐ Prevent spread or spill

☐ Dispose of immediately ☒ Other (specify): Flush to chemical waste treatment

WASTE DISPOSAL METHOD - *Consult federal, state, or local authorities for proper disposal procedures.*

Landfill

CONTINUED ON REVERSE SIDE ▶

N/A - Not Applicable.

Before using product, read and follow directions and precautions on product label and bulletins.

Oral (acute)
Judged to be a low order of toxicity

Dermal (acute)
"

Eye
Irritant

Inhalation (acute)
May cause minor irritation to mucous membrances

Chronic, Subchronic, etc.
NA

PERMISSIBLE EXPOSURE LIMIT (Specify if TLV/TWA or Ceiling [c])
ACGIH 19___ | OSHA 19___ | Other: NA

IRRITATION
- [ ] Skin — [ ] Severe — [ ] Moderate
- [X] Eye — [ ] Severe — [X] Moderate — [ ] Mild (transient)

CORROSIVITY
NA
- [ ] Skin — [ ] 4 hrs. (DOT) — [ ] 24 hrs. (CPSC)
- [ ] Eye — [ ] May cause blindness

SENSITIZATION
- [ ] Skin NA — [ ] Respiratory — [ ] Allergen

INHALATION EFFECTS
- [ ] Narcotic effect NA — [ ] Cyanosis — [ ] Asphyxiant

LUNG EFFECTS (Specify):
NA

OTHER (Specify):
- [ ] Repeated contact - skin defatter
- [ ] Other (Specify): NA

INGESTION
- [ ] Induce vomiting
- [X] Do NOT induce vomiting
- [X] Give plenty of water
- [X] Get medical attention
- [ ] Other (specify):

DERMAL
- [X] Flush with soap and water
- [ ] Get medical attention
- [ ] Contaminated clothing - remove & launder
- [ ] Contaminated shoes - destroy
- [ ] Other (specify):

EYE CONTACT
- [X] Flush with plenty of water for at least 15 minutes
- [X] Get medical attention
- [X] Other (specify): EYES - Hold eyelids open while flushing

INHALATION
- [X] Remove to fresh air
- [ ] If not breathing, give artificial respiration
- [ ] Give oxygen
- [ ] Get medical attention
- [ ] Other (specify):

VENTILATION REQUIREMENTS — *Always maintain exposure below permissible exposure limits*
- [ ] Consult an industrial hygienist or environmental health specialist
- [ ] Local exhaust
- [ ] Use with adequate ventilation
- [ ] Check for air contaminant and oxygen deficiency
- [X] Other (specify): Sufficient to maintain level below the specified hazardous ingredient (s0 concentration limit.

EYE
- [ ] Face shield
- [X] Safety glasses
- [ ] Goggles

HAND (GLOVE TYPE)
- [X] Butyl rubber
- [ ] Polyvinyl alcohol
- [X] Other (specify): Gloves are generally recommended fo prolonged repeated contac of any chemical. If concentration level i exceeded.
- [ ] Polyvinyl chloride
- [X] Neoprene
- [X] Natural rubber
- [X] Poly-ethylene

RESPIRATOR TYPE - *Use only NIOSH approved equipment*
- [ ] Self-contained
- [ ] Supplied air
- [ ] Can or cartridge gas or vapor
- [X] Filter - dust, fume, mist
- [X] Other (specify):

OTHER PROTECTIVE EQUIPMENT
- [ ] Rubber boots
- [ ] Apron
- [ ] Other (specify):

PRECAUTIONARY LABELING
- [X] Wash thoroughly after handling
- [X] Do not get in eyes, on skin or clothing
- [X] Do not breathe dust, vapor, mist, gas
- [ ] Keep container closed
- [X] Keep away from heat, sparks, and open flames
- [ ] Store in tightly closed containers
- [ ] Do not store near combustibles
- [ ] Keep from contact with clothing and other combustible materials
- [ ] Empty container may contain hazardous residues
- [ ] Use explosion proof equipment
- [ ] Other (specify):

Other handling and storage conditions
Minimum contact with this and all chemicals is recommended as a good general policy to foll

Prepared by	Date	Address	Phone
D. McLaughlin, Jr.	3-21-85	900 First Ave., King of Prussia, PA 19406	(215) 337-6634

"The above information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse are beyond our control, Pennwalt MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. User should satisfy himself that he has all current data relevant to his particular use.

MATERIAL SAFETY DATA SHEET

"ESSENTIALLY SIMILAR" TO OSHA FORM 20

FORM 4040 (Rev. 8-81)

ADDRESS: Pennwalt Corporation
900 First Ave.
King of Prussia, PA 19406

Emergency Phone Number(s)
Business: (215) 337-6639
Other: (215) 946-2826

PRODUCT IDENTIFICATION

Pennwalt Product Name: See attached list

Pennwalt Code No.: R30A-01

Chemical Name and Molecular Formula:

CAS No.(s): Mixture

Synonyms: Metalworking Compound

Chemical Family: Alkali

HAZARDOUS INGREDIENTS

MATERIALS OR COMPONENTS	% w/w	HAZARD DATA (TLV, LD50, LC50, etc.)
Borax (1303-96-4)	10-90	TWA 5 mg/m^3

SHIPPING INFORMATION

Not regulated by the Department of Transportation

PHYSICAL PROPERTIES

Boiling Point/Range	Melting Point	Freezing Point	Molecular Weight (Calculated)
NA °C °F	ND °C °F	NA °C °F	Mixture

Specific Gravity (H_2O=1)	Vapor Pressure (mm Hg)	Vapor Density (Air=1)
NA @ / °C	Nil @ °C °F	NA

Solubility in H_2O	% Volatiles by Volume	Evaporation Rate
Insoluble	Nil	NA ☐ Ether = 1 ☐ Water = 1 ☐ Butylacetate = 1

Appearance and Odor: Off white powder

Other: Color may be added at customer request

FIRE AND EXPLOSION DATA

Flash Point	Test Method	Flammable Limits	Autoignition Temperature/Fire Point
None °C °F		Lower NA % Upper %	°C NA °F

EXTINGUISHING MEDIA

☐ Water-spray ☒ Water-fog ☒ Water stream ☐ CO_2 ☐ Dry chemical ☐ Alcohol foam ☐ Foam ☐ Earth or sand NA

SPECIAL FIRE FIGHTING PROCEDURES

☐ Do not enter building ☐ Allow fire to burn ☐ Water may cause frothing ☐ Do not use water NA

UNUSUAL FIRE AND EXPLOSION HAZARDS

☒ Dust explosion hazard ☐ Sensitive to shock ☐ Contamination ☐ Temperature ☒ Other (specify): Explosive limit=0.5 oz/cu.f

REACTIVITY DATA

STABILITY

☒ Stable ☐ Unstable

CONDITIONS CONTRIBUTING TO INSTABILITY

☐ Thermal decomposition ☐ Photo degradation NA ☐ Polymerization ☐ Contamination

INCOMPATIBILITY - Avoid contact with

☒ Strong acids ☐ Strong alkalis ☒ Strong oxidizers ☐ Other (specify):

HAZARDOUS DECOMPOSITION PRODUCTS - THERMAL AND OTHER (list)

Thermal - Oxides of Carbon

CONDITIONS TO AVOID

☐ Heat ☐ Open flames ☒ Sparks ☒ Ignition sources ☒ Other (specify): Use good housekeeping to minimize dust buildup on overhead rafters, pipes, etc.

SPILL OR LEAK

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

☐ Flush with water ☐ Absorb with sand or inert material ☐ Neutralize ☒ Sweep or scoop up and remove ☐ Keep upwind. Evacuate enclosed spaces. ☐ Prevent spread or spill

☐ Dispose of immediately ☒ Other (specify): Flush to chemical waste treatment

WASTE DISPOSAL METHOD - *Consult federal, state, or local authorities for proper disposal procedures.*

Landfill

CONTINUED ON REVERSE SIDE ▶

NA - Not Applicable

Before using product, read and follow directions and precautions on product label and bulletins.

TOXICITY

Oral (acute)
Judged to be a low order of toxicity

Dermal (acute)
"

Eye
Irritant

Inhalation (acute)
May cause minor irritation to mucous membrane

Chronic, Subchronic, etc.
NA

PERMISSIBLE EXPOSURE LIMIT (Specify if TLV/TWA or Ceiling (c))
ACGIH 19__ see reverse | OSHA 19__ see reverse | Other: NA

IRRITATION
[ ] Skin [ ] Severe [ ] Moderate
[X] Eye [ ] Severe [X] Moderate [ ] Mild (transient)

CORROSIVITY
NA
[ ] Skin [ ] 4 hrs. (DOT) [ ] 24 hrs. (CPSC)
[ ] Eye [ ] May cause blindness

SENSITIZATION
[ ] Skin NA [ ] Respiratory [ ] Allergen

INHALATION EFFECTS
[ ] Narcotic effect NA [ ] Cyanosis [ ] Asphyxiant

LUNG EFFECTS (Specify):
NA

OTHER (Specify):
[ ] Repeated contact - skin defatter [ ] Other (Specify): NA

EMERGENCY AND FIRST AID

INGESTION
[ ] Induce vomiting [X] Do NOT induce vomiting [X] Give plenty of water [ ] Get medical attention [ ] Other (specify):

DERMAL
[X] Flush with soap and water [ ] Get medical attention [ ] Contaminated clothing - remove & launder [ ] Contaminated shoes - destroy [ ] Other (specify):

EYE CONTACT
[X] Flush with plenty of water for at least 15 minutes [X] Get medical attention [X] Other (specify): Hold eyelids open while flushing

INHALATION
[X] Remove to fresh air [ ] If not breathing, give artificial respiration [ ] Give oxygen [ ] Get medical attention [ ] Other (specify):

SPECIAL PROTECTION INFORMATION

VENTILATION REQUIREMENTS — *Always maintain exposure below permissible exposure limits*
[ ] Consult an industrial hygienist or environmental health specialist [ ] Local exhaust [ ] Use with adequate ventilation [ ] Check for air contaminant and oxygen deficiency
[X] Other (specify): Sufficient to maintain dust level below 0.5 oz/cu.ft. and the specified hazardous ingredient(s) concentration limit.

EYE
[X] Safety glasses [ ] Face shield [ ] Goggles

HAND (GLOVE TYPE)
[ ] Polyvinyl chloride [X] Neoprene [X] Butyl rubber [X] Natural rubber [ ] Polyvinyl alcohol [X] Polyethylene [X] Other (specify): Gloves are generally recommended for prolonged repeated contact of any chemical.

RESPIRATOR TYPE - *Use only NIOSH approved equipment*
[ ] Self-contained [ ] Supplied air [ ] Can or cartridge gas or vapor [X] Filter - dust, fume, mist [X] Other (specify): If concentration level is exceeded.

OTHER PROTECTIVE EQUIPMENT
[ ] Rubber boots [ ] Apron [ ] Other (specify): NA

SPECIAL PRECAUTIONS

PRECAUTIONARY LABELING
[X] Wash thoroughly after handling [X] Do not get in eyes, on skin or clothing [X] Do not breathe dust, vapor, mist, gas [ ] Keep container closed [X] Keep away from heat, sparks, and open flames [ ] Store in tightly closed containers
[ ] Do not store near combustibles [ ] Keep from contact with clothing and other combustible materials [ ] Empty container may contain hazardous residues [ ] Use explosion proof equipment [ ] Other (specify):

Other handling and storage conditions
Minimum contact with this and all chemicals is recommended as a good general policy to foll

Prepared by	Date	Address	Phone
n D. McLaughlin, Jr.	3-22-85	900 First Ave., King of Prussia, PA 19406	(215) 337-6634

PLEASE NOTE ▶ "The above information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse are beyond our control, Pennwalt MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION [illegible]

NAME	CS
COPPERSHIELD 6 BT	6661
COPPERSHIELD 6AR	4636
COPPERSHIELD 6AT	6660
COPPERSHIELD 6BC	4638
COPPERSKIN M	4675
STEELSKIN 18	4642
STEELSKIN 19DD	4705
STEELSKIN 19T	4748
STEELSKIN 19T2	4862
STEELSKIN 19T2	4878
STEELSKIN 19TV	4894
STEELSKIN 212	4728
STEELSKIN 214	4641
STEELSKIN BCA	4798
STEELSKIN EPL10	4621
STEELSKIN K10	4806
STEELSKIN SRW	4754
STEELSKIN W	4626
STEELSKIN WF4757	6309
STEELSKIN WLE	4788
STEELSKIN WRMC	4627
STEELSKIN WRMK	4743
STEELSKIN X2S	4758

MATERIAL SAFETY DATA SHEET

"ESSENTIALLY SIMILAR" TO OSHA FORM 20

FORM 4040 (Rev. 8-81)

PENNWALT

ADDRESS: Pennwalt Corporation
900 First Ave.
King of Prussia, PA 19406

Emergency Phone Number(s)
Business: (215) 337-6639
Other: (215) 946-2826

PRODUCT IDENTIFICATION

Pennwalt Product Name: This applies to the following products:

Pennwalt Code No.: R38B01

Chemical Name and Molecular Formula

Code	Name	Code	Name	Code	Name
6659	Redskin 15M	4853	Redskin 11R	4730	Redskin 9R
4897	Redskin 9M	4784	Redskin 15A	4726	Redskin 9W
4896	Redskin 9B	4753	Redskin 11M	4724	Redskin 7R

Synonyms: Metalworking Compound

CAS No.(s):

Chemical Family: Copper Compound

HAZARDOUS INGREDIENTS

MATERIALS OR COMPONENTS	% w/w	HAZARD DATA (TLV, LD50, LC50, etc.)
Copper Salts (7440-50-8)	80 - 90	TWA mg/m^3 (Dust) (as Cu) LD_{50} 470 mg/kg/Oral rat (As Cu)

SHIPPING INFORMATION

RQ: Cupric Sulfate Mixture; ORM-E, NA 9109; Compound, Iron or Steel, Copper Sulfate Base

PHYSICAL PROPERTIES

Boiling Point/Range	Melting Point	Freezing Point	Molecular Weight (Calculated)
°C NA °F	ND °C °F	NA °C °F	Mixture

Specific Gravity (H_2O=1)	Vapor Pressure (mm Hg)	Vapor Density (Air=1)
ND @ / °C	NA @ °C °F	NA

Solubility in H_2O	% Volatiles by Volume	Evaporation Rate	Appearance and Odor	Other
Soluble	NA	NA ☐ Ether = 1 ☐ Water = 1 ☐ Butylacetate = 1	Blue Powder	

FIRE AND EXPLOSION

Flash Point	Test Method	Flammable Limits	Autoignition Temperature/Fire Point
°C °F	None	Lower % Upper NA %	°C NA °F

EXTINGUISHING MEDIA

☒ Water-spray ☒ Water-fog ☐ Water stream ☒ CO_2 ☒ Dry chemical ☐ Alcohol foam ☒ Foam ☐ Earth or sand

SPECIAL FIRE FIGHTING PROCEDURES

☐ Do not enter building ☐ Allow fire to burn ☐ Water may cause frothing ☐ Do not use water

UNUSUAL FIRE AND EXPLOSION HAZARDS

☐ Dust explosion hazard ☐ Sensitive to shock ☐ Contamination ☐ Temperature ☐ Other (specify):

REACTIVITY DATA

STABILITY

☒ Stable ☐ Unstable

CONDITIONS CONTRIBUTING TO INSTABILITY

☐ Thermal decomposition ☐ Photo degradation ☐ Polymerization ☐ Contamination

INCOMPATIBILITY - Avoid contact with

☐ Strong acids ☐ Strong alkalis ☐ Strong oxidizers ☐ Other (specify):

HAZARDOUS DECOMPOSITION PRODUCTS - THERMAL AND OTHER (list)

Thermal-Oxides of Carbon

CONDITIONS TO AVOID

☐ Heat ☐ Open flames ☐ Sparks ☐ Ignition sources ☐ Other (specify):

SPILL OR LEAK

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

☐ Flush with water ☐ Absorb with sand or inert material ☐ Neutralize ☐ Sweep or scoop up and remove ☐ Keep upwind. Evacuate enclosed spaces. ☐ Prevent spread or spill

☐ Dispose of immediately ☒ Other (specify): Flush to chemical waste treatment

WASTE DISPOSAL METHOD - *Consult federal, state, or local authorities for proper disposal procedures.*

CONTINUED ON REVERSE SIDE ▶

A – Not Applicable.

Before using product, read and follow directions and precautions on product label and bulletins.

TOXICITY

Oral (acute)

Dermal (acute)

Eye	Inhalation (acute)

Chronic, Subchronic, etc.

PERMISSIBLE EXPOSURE LIMIT (Specify if TLV/TWA or Ceiling (c))

ACGIH 19__	OSHA 19__	Other: NA

IRRITATION

- [X] Skin — [ ] Severe — [X] Moderate
- [ ] Eye — [ ] Severe — [ ] Moderate — [ ] Mild (transient)

CORROSIVITY

- [ ] Skin — [ ] 4 hrs. (DOT) — [ ] 24 hrs. (CPSC)
- [X] Eye — [X] May cause blindness

SENSITIZATION

[ ] Skin [ ] Respiratory [ ] Allergen

INHALATION EFFECTS

[ ] Narcotic effect [ ] Cyanosis [ ] Asphyxiant

LUNG EFFECTS (Specify):

OTHER (Specify):

[ ] Repeated contact - skin defatter [ ] Other (Specify):

EMERGENCY AND FIRST AID

INGESTION

[X] Induce vomiting [ ] Do NOT induce vomiting [X] Give plenty of water [X] Get medical attention [ ] Other (specify):

DERMAL

[X] Flush with soap and water [ ] Get medical attention [ ] Contaminated clothing - remove & launder [ ] Contaminated shoes - destroy [ ] Other (specify):

EYE CONTACT

[X] Flush with plenty of water for at least 15 minutes [X] Get medical attention [X] Other (specify): Eyes - Hold eyelids open while flushing

INHALATION

[X] Remove to fresh air [ ] If not breathing, give artificial respiration [ ] Give oxygen [ ] Get medical attention [ ] Other (specify):

SPECIAL PROTECTION INFORMATION

VENTILATION REQUIREMENTS — *Always maintain exposure below permissible exposure limits*

[ ] Consult an industrial hygienist or environmental health specialist [X] Local exhaust [ ] Use with adequate ventilation [ ] Check for air contaminant and oxygen deficiency

[ ] Other (specify): Sufficient to maintain level below the specified Hazardous Ingredient(s) concentration limit.

EYE

[X] Safety glasses [ ] Face shield [X] Goggles

HAND (GLOVE TYPE)

[ ] Polyvinyl chloride [ ] Neoprene [X] Butyl rubber [X] Natural rubber [ ] Polyvinyl alcohol [ ] Poly-ethylene [ ] Other (specify):

RESPIRATOR TYPE - *Use only NIOSH approved equipment*

[ ] Self-contained [ ] Supplied air [ ] Can or cartridge gas or vapor [X] Filter - dust, fume, mist [ ] Other (specify):

OTHER PROTECTIVE EQUIPMENT

[ ] Rubber boots [ ] Apron [ ] Other (specify):

SPECIAL PRECAUTIONS

PRECAUTIONARY LABELING

[X] Wash thoroughly after handling [X] Do not get in eyes, on skin or clothing [X] Do not breathe dust, vapor, mist, gas [ ] Keep container closed [ ] Keep away from heat, sparks, and open flames [ ] Store in tightly closed containers

[ ] Do not store near combustibles [ ] Keep from contact with clothing and other combustible materials [X] Empty container may contain hazardous residues [ ] Use explosion proof equipment [ ] Other (specify):

Other handling and storage conditions

Minimum contact with this and all chemicals is recommended as a good general policy to fol

Prepared by	Date	Address	Phone
H[illegible]gh D. McLaughlin, Jr.	3-20-85	900 First Ave., King of Prussia, PA 19406	(215) 337-6634

(7)

HENRY E. SANSON & SONS, INC.

775 LOUIS DRIVE P.O. BOX 2809 WARMINSTER, PA 18974-0357
(215) 443-8820 TELEX 834723

April 17, 1985

Mr. Bert Bowden
Atlantic Wire Co.
1 Church St.
Branford, CT 06405

Dear Mr. Bowden:

Thank you for your telephone call regarding Sanson BICKDRAW 704. A copy of the U.S. Dept. of Labor Material Safety Data Sheet describing the health and safety characteristics of our product is enclosed.

BICKDRAW 704 is a soap-type lubricant concentrate supplied in the form of a stiff, clear amber gel. The product is intended to be diluted in water to make a translucent solution that is an excellent lubricant for drawing steel and copper wire.

We submit the following confidential statement of composition for commercial production of BICKDRAW 704:

Water	42 - 45% wt.
Potassium soaps	40 - 43 "
Mineral oil	6 - 8 "
Sodium petroleum sulfonate	5 - 7 "
Glycolic and alcoholic coupling agents	1 "

We trust this information will be satisfactory for your use and will, of course, welcome any questions you may have.

Sincerely,
HENRY E. SANSON & SONS, INC.

Richard L. Quanstrom
Assistant Vice-President
Technical Sales

RLQ/w
Enclosure

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
Henry E. Sanson & Sons, Inc.	(215) 443-5220
ADDRESS (Number, Street, City, State, and ZIP Code) 775 Louis Drive, Warminster, PA 18974-0357	
CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS Bickdraw 704
CHEMICAL FAMILY Fatty mineral oil product	FORMULA Alkali metal soap in oil/water

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
Not classified a Hazardous Material		

SECTION III - PHYSICAL DATA

BOILING POINT (°F.) Above	212°F	SPECIFIC GRAVITY (H_2O=1) 60/60°F	0.98
VAPOR PRESSURE (mm Hg.)	- -	PERCENT, VOLATILE BY VOLUME (%)	- -
VAPOR DENSITY (AIR=1)	- -	EVAPORATION RATE (_____ =1)	- -
SOLUBILITY IN WATER Forms a brownish clear solution			
APPEARANCE AND ODOR Clear amber paste; slightly soapy odor			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used) (COC) Above 325°F	FLAMMABLE LIMITS	Lel	Uel
EXTINGUISHING MEDIA Foam, dry chemical, water or CO_2			
SPECIAL FIRE FIGHTING PROCEDURES			
In confined areas, use air supplied breathing apparatus.			
UNUSUAL FIRE AND EXPLOSION HAZARDS			

(Continued on reverse side)

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

Non-hazardous material - No TLV established

EFFECTS OF OVEREXPOSURE

As a concentrate; mild skin and eye irritation.

As water thinned product: similar to hand soap (possible drying of skin).

EMERGENCY AND FIRST AID PROCEDURES

Skin contact: Wash with plenty of water

Eye contact; flush with water for 15 min. and seek medical attention.

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	

INCOMPATABILITY *(Materials to avoid)*

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Scoop up paste and flush residue with water

WASTE DISPOSAL METHOD

Dispose of in accordance with local, state and federal laws governing disposal of fatty/mineral oil soaps.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION *(Specify type)*

None required

VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL *(General)* None required	OTHER

PROTECTIVE GLOVES Rubber, if desired

EYE PROTECTION Safety glasses or goggles in accordance with Standard Safe shop practice.

OTHER PROTECTIVE EQUIPMENT

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Keep in closed container; avoid extreme heat; keep from freezing.

OTHER PRECAUTIONS

GPO 934-190

Bob Wilson

AMCHEM Products, Inc.

300 Brookside Avenue
Ambler, PA 19002-3498

April 15, 1985

Atlantic Wire Company
1 Church Street
Branford, CT 06405

Attention: Bert Bowden
Purchasing Manager

Dear Mr. Bowden:

Enclosed, on a confidential basis, are Material Safety Data Sheets to cover the following Amchem products:

Ridoline XP
Rodine 85

Any questions you wish to have answered regarding this information should be directed to our Coordinator of Labeling & Registration, Mr. ~~Hugh Gehman~~ Bob Boulden, at (215) 628-1442.
Jack Carrolo -1324

Thank you for your interest in our products.

Sincerely,

AMCHEM PRODUCTS DIVISION

Lois McFadden

(Mrs.) Lois McFadden
Technical Services

lm

MATERIAL S ETY DATA SHEET

(Approved by U.S. Department of Labor "Essentially Similar" to Form OSHA-20)

Revised: 8/26/83

I. Manufacturer's Name: Amchem Products, Inc.
Address (number, street): 300 Brookside Avenue
(City, state, zip code): Ambler, PA 19002
Emergency Telephone Number: (215) 628-1000
Information Supplied by: Hugh Gehman
Date: 6/15/83 Title: Coordinator of Labeling &Registration

Product Trade Name: Rodine 85
Chemical Name & Synonyms:
Chemical Family: Formula:
Special Hazards:

CONFIDENTIAL
Proprietary Information
Amchem Products, Inc.

II. HAZARDOUS INGREDIENTS

MATERIAL	%	TLV (Units)	MATERIAL	%	TLV (Units)
Substituted Triazine	40-50		Formaldehyde	< 1	3 mg/M^3
Thiourea or substituted thiourea	2-4		Ortho Toluidine	< 0.1	9 mg/M^3
Triphenyl Sulfonium Chloride	1-3				

III. PHYSICAL DATA

a. Boiling point (°F): ≥ 212
b. Vapor pressure (mmHg):
c. Vapor density (Air = 1):
d. Solubility in water (%): complete
e. Specific gravity (H_2O = 1): 1.05-1.07
f. Per cent volatile by volume:
g. Evaporation rate (= 1):
h. Appearance & odor: Translucent medium brown liquid; slight pungent odor

IV. FIRE AND EXPLOSION HAZARD DATA

a. Flash point (state method, °F): None
b. Ignition temperature (°F):
c. Flammable limits in air, LEL: UEL:
d. Extinguishing media: Water
e. Special fire fighting procedures: None
f. Unusual fire and explosion hazards: None

V. HEALTH HAZARD DATA

a. Physiological Properties:
1. Local effects to skin: Will burn
2. Genetic Hazard
3. Acute oral toxicity (LDso if available): Will burn mucous membranes
4. Dermal absorption (LD so if available):
Will burn mucous membranes
6. Threshold Limit Value (or estimate): 3 mg/M^3 based on formaldehyde
7. Local effects to eyes: Will burn

Product Name: Rodine 85

b. Emergency and First Aid Procedures:

Special Hazards

1. Ingestion: Drink milk of magnesia, aluminum hydroxide gel, or limewater followed by several glasses of water. Call a doctor.

2. Eye Contact: Flush immediately with copious amounts of water for at least 15 minutes. Call a doctor.

3. Skin Contact: Wash with soap and water and rinse thoroughly.

4. Inhalation: Remove from contaminated area to fresh air.

5. Other Health Data:

I. REACTIVITY DATA

a. Stability: Stable x Unstable Conditions to avoid:

b. Incompatible Materials:

c. Hazardous Decomposition Products: oxides of nitrogen and carbon and hydrogen chloride

d. Hazardous Polymerication: May occur Will not occur x Conditions to avoid:

II. SPILL OR LEAK PROCEDURES

a. Steps to be taken for spill or leak: Transfer unspilled material to a clean polyethylene container. Soak up spilled material with

b. Waste disposal methods: absorbent material and either incinerate or put in a landfill according to regulations.

III. SPECIAL PROTECTION INFORMATION

a. Respiratory protection (Specify type) requirements:

d. Eye protection required: Safety goggles

b. Ventilation requirements (local exhaust, general dilution, special): Local Exhaust

c. Protective gloves required: Rubber

e. Other required equipment: Rubber Aprons

X. SPECIAL PRECAUTIONS

a. Precautionary label required? If yes, please attach. No. Amchem Warning Statement 109.

b. Precautions to be taken in handling and storing: Store in a cool place.

c. Other precautions:

MATERIAL S. _TY DATA SHEET

(Approved by U.S. Department of Labor "Essentially Similar" to Form OSHA-20)

I. Manufacturer's Name: Amchem Products, Inc.
Address (number, street): 300 Brookside Avenue
(City, state, zip code): Ambler, PA 19002
Emergency Telephone Number: (215) 628-1000
Information Supplied by: Hugh Gehman
Date: 2/27/83 Title: Coordinator of Labeling & Registration

Product Trade Name: Ridoline XP
Chemical Name & Synonyms:
Chemical Family: Formula:
Special Hazards:

CONFIDENTIAL
Proprietary Information
Amchem Products, Inc.

II. HAZARDOUS INGREDIENTS

MATERIAL	%	TLV (Units)	MATERIAL	%	TLV (Unit
Sodium Hydroxide	35-45	2 mg/M^3			
Sodium Metasilicate	55-65				

III. PHYSICAL DATA

a. Boiling point (°F): solid
b. Vapor pressure (mmHg):
c. Vapor density (Air = 1):
d. Solubility in water (%): appreciable
e. Specific gravity (H_2O = 1): solid
f. Per cent volatile by volume:
g. Evaporation rate (= 1):
h. Appearance & odor: white powder; odorless

IV. FIRE AND EXPLOSION HAZARD DATA

a. Flash point (state method, °F): None
b. Ignition temperature (°F):
c. Flammable limits in air, LEL: UEL:
d. Extinguishing media: Water
e. Special fire fighting procedures: None
f. Unusual fire and explosion hazards: None

V. HEALTH HAZARD DATA

a. Physiological Properties:
1. Local effects to skin: May burn
2. Genetic Hazard
3. Acute oral toxicity (LD50 if available): May burn mucous membranes
4. Dermal absorption (LD50 if available):
5. Inhalation effects (LC50 if available):
6. Threshold Limit Value (or estimate): 2 mg/M^3 based on sodium hydroxide
7. Local effects to eyes: May burn

V

Product Name Ridoline XP

b. Emergency and First Aid Procedures:

Special Hazards

1. Ingestion: Dilute by drinking several glasses of water, milk, or fruit juice. Call a doctor.

2. Eye Contact: Flush immediately with copious amounts of water for at least 15 minutes. Call a doctor.

3. Skin Contact: Wash with soap and water and rinse thoroughly.

4. Inhalation:

5. Other Health Data:

VI. REACTIVITY DATA

a. Stability: Stable x Unstable Conditions to avoid:

b. Incompatible Materials: acids

c. Hazardous Decomposition Products:

d. Hazardous Polymerication: May occur Will not occur x Conditions to avoid:

VII. SPILL OR LEAK PROCEDURES

a. Steps to be taken for spill or leak: Transfer unspilled material to a clean polyethylene container. Neutralize spilled material with dilute hydrochloric or acetic acid to pH 7-8. Flush neutralized material to treatment plant with plenty of water and with approval of regulatory agency.

b. Waste disposal methods:

VIII. SPECIAL PROTECTION INFORMATION

a. Respiratory protection (Specify type) requirements: Dust mask-NIOSH approved

b. Ventilation requirements (local exhaust, general dilution, special):

c. Protective gloves required: Rubber

d. Eye protection required: Safety Goggles

e. Other required equipment: Rubber Aprons

IX. SPECIAL PRECAUTIONS

a. Precautionary label required? If yes, please attach. DOT Corrosive. Amchem Warning Statements 6 and 35.

b. Precautions to be taken in handling and storing: Store in a dry place.

c. Other p[illegible]utions:

NUTMEG CHEMICAL COMPANY

manufacturing chemists

125 MARKET STREET - P.O. BOX 309, NEW HAVEN, CONN. 06513-0309
TEL. (203) 777-7691

April 15, 1985

Mr. Burt Bowder
Atlantic Wire Company
1 Church Street
Branford, Connecticut 06405

Dear Mr. Bowder:

In response to your telephone request, enclosed please find a Material Safety Data Sheet for Magnifloc 6210, this data sheet gives you the chemical breakdown that you asked for.

If you need further information, please do not hesitate to contact us.

Very truly yours,
NUTMEG CHEMICAL COMPANY

Henry C. Payne

Henry C. Payne,
Technical Services Director

HCP:ss
Enclosure

cc: D. Winchell

CYANAMID

MATERIAL SAFETY DATA

MSDS NO. 3443-01
CAS NO. ----------
DATE: 01/17/84

PRODUCT IDENTIFICATION

TRADEMARK:	**MAGNIFLOC® 6210 Flocculant**
SYNONYMS:	Anionic polyacrylamide in water-in-oil emulsion
CHEMICAL FAMILY:	Anionic polyacrylamide copolymer
MOLECULAR FORMULA:	Mixture
MOLECULAR WGT.:	Mixture

WARNING

HARMFUL IF INHALED
CAUSES SKIN BURNS
MAY CAUSE EYE IRRITATION
SPILLS OF THIS PRODUCT ARE VERY SLIPPERY

HAZARDOUS INGREDIENTS

COMPONENT	CAS. NO.	%	TWA/CEILING	REFERENCE
Petroleum distillate	008002-05-9	24	500 ppm	OSHA

NFPA HAZARD RATING

Not Established

HEALTH HAZARD INFORMATION

EFFECTS OF OVEREXPOSURE:

Acute oral (rat) and acute dermal (rabbit) LD50 values are > 10 ml/kg. Minimal eye irritation was produced in rabbit testing. When this product was tested in rabbits for skin irritation under occlusive conditions, as would be produced if the product was spilled into boots, irreversible skin damage was produced. When the product was tested under nonocclusive conditions with 24 hours of skin contact, as would occur when product was spilled on clothing, some eschar formation was observed but the overall skin irritation score was lower (2.2 moderately irritating). Aspiration of the solvent, petroleum distillate, may cause chemical pneumonitis. Overexposure to vapor may cause dizziness, drowsiness, headached and nausea.

FIRST AID:

If MAGNIFLOC 6210 is swallowed do not induce vomiting. Give several glasses of milk or water. Administer a saline cathartic. In case of skin contact, remove contaminated clothing with out delay. Cleanse skin thoroughly with soap and water. Do not omit cleaning hair or under fingernails if contaminated. Do not reuse clothing without laundering. In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes. Refer to a physician if irritation persists. If vapors of MAGNIFLOC 6210 are inhaled, remove from exposure. Administer oxygen if there is difficulty in breathing. If patient is not breathing, give artificial respiration until normal breathing is restored.

EMERGENCY PHONE: 201/835-3100

AMERICAN CYANAMID COMPANY, WAYNE, NEW JERSEY 07470

EXPOSURE CONTROL METHODS

Where a closed system is not used, good enclosure and local exhaust ventilation should be provided to minimize exposure. Where concentrations are below the PEL, no respiratory protection is required. For spills or leaks, such protection may be necessary. Where exposures exceed PEL, use respirator approved by NIOSH for the material and level of exposure. See "GUIDE TO INDUSTRIAL RESPIRATORY PROTECTION" (NIOSH). Material causes eye and skin irritation on contact. A full facepiece respirator will provide eye and face protection. Wear the following as necessary to prevent skin contact; work pants, long sleeve work shirt, impervious gloves and impervious apron. For operations where eye or face contact can occur wear respiratory protection outlined above, (full facepiece) or chemical splash proof goggles. Provide eyewash fountain and safety shower in close proximity to points of potential exposure.

FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT: METHOD:	> 200 F (> 93.3 C) Pensky-Martens
FLAMMABLE LIMITS (% BY VOL):	Not Available
AUTOIGNITION TEMP:	Not Available
DECOMPOSITION TEMP:	Not Available
FIRE FIGHTING:	Use alcohol foam, carbon dioxide or dry chemical to extinguish fires. Water may be ineffective. Wear self-contained, positive pressure breathing apparatus and full firefighting protective clothing. See Exposure Control Methods for special protective clothing. Use water to keep containers cool.

REACTIVITY DATA

STABILITY: CONDITIONS TO AVOID:	Stable None known
POLYMERIZATION: CONDITIONS TO AVOID:	Will Not Occur None known
INCOMPATIBLE MATERIALS:	Strong oxidizing agents. This material reacts slowly with iron, copper and aluminum, resulting in corrosion and product degradation.
HAZARDOUS DECOMPOSITION PRODUCTS:	Thermal decomposition or combustion may produce carbon monoxide, carbon dioxide, ammonia and/or oxides of nitrogen.

PHYSICAL PROPERTIES

APPEARANCE AND ODOR:	White, viscous, opaque liquid; slight hydrocarbon odor
BOILING POINT:	Water phase boils at ~212 F (~100 C). Initial boiling point for oil phase is ~347 F (~175 C).
MELTING POINT:	0 F (−18 C)
VAPOR PRESSURE:	Not Available
SPECIFIC GRAVITY:	1.0
VAPOR DENSITY:	Not Available
% VOLATILE (BY VOL):	~70
OCTANOL/H_2O PARTITION COEF.:	Not Available
pH:	Not Available
SATURATION IN AIR (BY VOL):	Not Available
EVAPORATION RATE:	< 1 (Butyl Acetate = 1)
SOLUBILITY IN WATER:	Appreciable

SPILL OR LEAK PROCEDURES	STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:	Where exposure level is not known, wear NIOSH approved positive pressure self-contained respirator. Where exposure level is known, wear NIOSH approved respirator suitable for level of exposure. In addition to the protective clothing/equipment in Exposure Control Methods, wear impervious boots. Spills of this material are very slippery. Spilled material should be absorbed onto an inert material and scooped up. The area should be thoroughly flushed with water and scrubbed to remove residue. If slipperiness remains apply more dry-sweeping compound.
WASTE DISPOSAL	Disposal must be made in accordance with applicable governmental regulations.	
SPECIAL PRECAUTIONS	HANDLING AND STORAGE/OTHER:	OSHA regulations (29 CFR 106.a.14), require that the flashpoint of materials of this type be determined by the Pensky-Martens Closed Tester method. The test for this product indicates it has a flashpoint greater than 200 F (93.3 C). Another method indicates a potential for flash at approximately 154 F (67.8 C); therefore, caution should be exercised in storage and handling. Avoid storage vessels and piping constructed of iron and aluminum. Store MAGNIFLOC 6210 at temperatures between 40 F (5 C) and 90 F (30 C) to maintain stability of the emulsion.

Marvin A. Friedman Marvin A. Friedman, Ph.D., Director of Toxicology and Product Safety

ATTACHMENT E

AQUALOGIC® Inc.
30 DEVINE STREET
NORTH HAVEN, CONN. 06473
TELEPHONE (203) 248-8959

August 16, 1985

Mr. William W. Camp
Camp Associates Inc.
120 Copeland Road
Suite 243
Atlanta, GA 30342

Re: Delisting Petition #0189 for the Atlantic Wire Company

Dear Mr. Camp:

A sampling-analytical program was initiated for the Atlantic Wire Company according to the stipulations set forth in Robert Wilson's letter dated March 27, 1985.

Four separate sludge samples were obtained on 4/11/85, 4/25/85, 5/9/85 and 6/24/85 respectively. New, distilled water rinsed containers were used for sampling. Samples were returned to the laboratory within an hour and analytical procedures commenced at that time. Testing methods were according to EPA-600/4-79-020 "Methods for Chemical Analysis of Water and Wastes", "Standard Methods", 15th edition and "Test Methods for Evaluating Solid Waste", 1980 edition. Specific major pieces of equipment utilized during testing included a Lab-Line multi-magnestir, model no. 1278; Instrumentation Laboratory Inc. pH meter, model no. 135A and a Perkin Elmer atomic absorption unit, model no. 2380.

REPRESENTATIVE IN ACCORDANCE W/ SAMPLERS & Sampling Procedures for H.W. STREAMS 600/2-80-018 1/80

EP. TOX SPECIFIED IN SW 846 OR 40CFR261 APP II

The Atlantic Wire sludge samples did not exhibit any characteristics of ignitability, reactivity or corrosivity. The sludge will not ignite because of its aqueous nature. It is non-reactive based on the use of sodium hydroxide in the treatment process rendering an inactive metal hydroxide. The sludge has a pH around 8.0 and consequently non-corrosive.

Aqualogic Inc. maintains a state approved public health laboratory, certification no. PH-0454-State of Connecticut.

If you have any questions, feel at liberty to call.

Very truly yours,

Joseph F. Latka
Technical Director

JFL/re

cc: Robert S. Wilson

ATTACHMENT F

Test No. 2831

WATER AND WASTEWATER REPORT

NAME: Atlantic Wire

ADDRESS: 1 Church Street
Branford, CT 06405

ATTN: Doug McConnell

DATE: 4/30/85

SOURCE OF SAMPLE: Sludge

DATE OF COLLECTION: 4/11/85

COLLECTED BY: Aqualogic

Parameter	Result		Parameter	Result
EP Toxicity				
Cr	0.05	mg/l		
Ni	2.19	mg/l		

why not entire metal protocol?

Comments: The above results reflect analyticals performed on EP Toxicity test leachate as per EPA Manual, "Test Methods for Evaluating Solid Waste" 1980 edition.

Approved by:

Joseph E. Latka, Technical Director

Approved Public Health Laboratory
No. PH-0454-State of Connecticut

<-Less Than

INDUSTRIAL WASTE
WATER TREATMENT SYSTEMS

AQUALOGIC® Inc.

ENGINEERS · CHEMISTS
DESIGNERS · MANUFACTURERS

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Test No. [illegible]

WATER AND WASTEWATER REPORT

NAME: Atlantic Wire Company

ADDRESS: 1 Church Street
Branford, CT 06405

ATTN: Bob Wilson

DATE: 5/10/85

SOURCE OF SAMPLE: Liquid Sludge

DATE OF COLLECTION: 4/25/85

COLLECTED BY: Aqualogic

Parameter	Result		Parameter	Result
TOC	324	mg/l		
Ni	1.58	mg/l		
Cr	< 0.05	mg/l		

Comments: The above results reflect analyticals performed on EP Toxicity test leachate as per EPA Manual, "Test Methods for Evaluating Solid Waste" 1980 edition.

Approved by:

Joseph F. Latka, Technical Director

Approved Public Health Laboratory
No. PH-0454-State of Connecticut

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Test No. _____

WATER AND WASTEWATER REPORT

NAME: Atlantic Wire

ADDRESS: 1 Church Street
Branford, CT 06405

ATTN: Doug McConnell

DATE: 5/30/85

SOURCE OF SAMPLE: Sludge

DATE OF COLLECTION: 5/9/85

COLLECTED BY: Aqualogic

Parameter	Result		Parameter	Result
EP Toxicity				
Ni	1.73	mg/l		
Cr	<0.05	mg/l		
TOC	359	mg/l		

Comments: The above results reflect analyticals performed on EP Toxicity test leachate as per EPA Manual, "Test Methods for Evaluating Solid Waste" 1980 edition.

Approved by:

Joseph F. Latka, Technical Director

Approved Public Health Laboratory
No. PH-0454-State of Connecticut

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ATTACHMENT G

Test No. 2041

WATER AND WASTEWATER REPORT

NAME: Atlantic Wire

ADDRESS: 1 Church Street
Branford, CT 06405

ATTN: Doug McConnell

DATE: 4/30/85

SOURCE OF SAMPLE: Sludge

DATE OF COLLECTION: 4/11/85

COLLECTED BY: Aqualogic

Parameter	Result		Parameter	Result
Mass Analysis				
Cr	0.520	g/kg		
Ni	0.526	g/kg		
CNT	0.01	mg/l		
TOC	362	mg/l		

Comments:

RECEIVED
MAY 3 - 1985

Approved by:

Joseph F. Lajka, Technical Director

Approved Public Health Laboratory
No. PH-0454-State of Connecticut

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